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ABSTRACT
              The rapid growth of educational research and
development in America has widened the gap between average classrcom
practice and "best available" validated practices resulting frcm
research and development at educational laboratories, universities,
and school-based practice improvement projects. The extension agent
system was chosen to change the educational dissemination system from
a passive to an active one. Programs already in existence were
studied and personnel functions were extracted to develop models.
Job/role descriptions were compiled and divided into selection
criteria and teachable knowledge/skills. Finally 28 modules to train
project directors, resource personnel and field personnel were
developed and tested. This docume : details the work performed and
conclusions reached during the development project. Detailed
information about the modules and how they can be utilized is
available in the Trainers' Book of modules (LI 004362) and the
Trainees' Book of modules (LI 004363). (Author/DH)

DEVELOPMENT OF TRAINING RESOURCES

FOR EDUCATIONAL EXTENSION

SERVICES PERSONNEL

1. FINAL REPORT

April 30, 1973

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PREFACE

The work performed jointly by Stanford and the System Development Corporation on NIE-NCEC contract #OEC-0-72-4904 resulted in three major products:

1. Report of work performed, including review and synthesis of extension models; delineation of personnel functions, tasks, trainable skills, and selection criteria; plan and rationale for training sessions; description of the conduct of training; evaluation of training; recommendations to NIE-NCEC for follow-on training plans.

2. A "Trainer's Book" of training modules that can be used in educational information projects at various levels to train directors, retrieval specialists, and field agents for those projects.

3. A "Trainee's Book" of training modules, counterpart volume to the "Trainer's Book."

This project was undertaken in mid-1972 in the context of growing federal support for "active dissemination systems" in education through the National Center for Educational Communication, USOE. The original charge to Stanford and SDC was, first, to configure effective models for active dissemination projects in states chosen for developmental or demonstration grants by the federal government and, second, to compile training materials for dissemination personnel working in such projects.

With the transfer of USOE's dissemination functions to NIE, we have entered a retrenchment phase in federal support of active dissemination programs. No new developmental or demonstration grants have been awarded, and continuance of previous grants seems doubtful. Therefore the results of this project will probably not be used in the original context of a federal-state partnership for the establishment of active dissemination systems.

Even as the federal role declines, however, we see active dissemination projects being undertaken in a number of states with little or no federal support. These projects are configured in familiar ways -- that is, they are represented by models in this report, and their personnel perform the same generic tasks that we have outlined for personnel in the federal-state program.

Our training perspective and the associated compilation of materials began to take shape at the height of the federal-state program planning. It is virtually impossible at this time to remove the federal role and its implications from the materials. Among other reasons, the active dissemination projects from which we can draw experience-based materials have been federally supported, and the federal government continues to support other key elements of the dissemination system, notably ERIC.

Still, whenever possible, the rationale and content of the training modules has been left unspecific as to project locus or sponsorship. Presumably the staff of a local educational resource center could be trained with selected modules from the set, as could the staff of a dissemination project located in an intermediate education unit or in a state department of education. The modules should be equally useful to staff of a project supported by state or local funds, by a foundation, cr by an entrepreneurial fee-for-service arrangement.

In any event, the three volumes of the Stanford-SDC project (Final Report, Trainer's Book, and Trainee's Book) are to be kept in the public domain so that users can freely adapt materials to their local needs.

A project like this incurs many debts to advisers and participants. We began the project in mid-1972 with visits to three Pilot State Dissemination Programs, where we received the full cooperation of the program directors (Oregon, George Katagiri; South Carolina, W. Edward Ellis; Utah, Kenneth P. Lindsay) and their able staffs.

In the fall of 1972 and the spring of 1973 we were guided
by review sessions with our Educational Extension Training
Resources Advisory Committee (EETRAC). EETRAC members who
attended one or both of those meetings include: Rudy Bretz (Rand
Corporation), Richard Brickley (RISE Information Center), John M.
Coulson (NIE), Ronald Havelock (Univ. of Michigan), Paul Hood
(Far West Educational Laboratory), Charles Jung (Northwest Educa-
tional Laboratory), Kenneth P. Lindsay (Utah State Dept. of Edu-
cation), Frank Mattas (San Mateo County Educational Resources
Center), Ron McBeath (San Jose State University), and Sam Sieber
(Columbia University).

In addition to several persons mentioned above, the training
staff for our pilot training sessions included: Jack Bech (Oregon
State Dept. of Education), Robert Fussell (Oregon State Dept. of
Education), Gerald Hawley (South West Educational Development
Center, Utah), Richard Herlig (Project Communicate, Kansas),
Allan Humphrey (Univ. of California, Berkeley), Larry Hutchins
(Far West Educational Laboratory).

Attendants at the training sessions were actually our
collaborators in experiencing and critiquing the modules. They
were: Carl Berman (Colorado), Amparo Boveda (District of Columbia),
John Casey (New Jersey), Lynn Hollis (Texas), Joseph Jefferson
(South Carolina), Joyce Kroeller (Rhode Island), Albert Kunkel
(New Jersey), Leo Lambert (Texas), Willson Maynard (Oregon), Diane
McIntyre (Far West Laboratory), Anne Moughon (Georgia), Harry
Osgood (Connecticut), Roy Tally (Wisconsin), Elizabeth Tiemeyer
(Georgia).

Bibliographic searches conducted at Stanford by Robert Wade
greatly aided our review of "interventions" (Section II). Stanford
production team for the final report included Birgit Amouroux and
Anne Jensen.

I. BACKGROUND

In 1969 Dr. James E. Allen, Jr., then Commissioner of Education, stated that the first goal of the United States Office of Education ought to be to "develop a nationwide strategy for maintaining a continuous process of improvement and relevance in American education." He called for "a systematic plan for linking the processes for change -- educational research, development, demonstration, evaluation, and dissemination...."

In 1971 Dr. Sidney P. Marland Jr., now Assistant Secretary of HEW for Education, stated that "We are constructing a nationwide educational communications network to disseminate proven new practice in order to move the art of education from its present condition to one of the increased quality that we demand of ourselves. We must proceed more swiftly to implement the products of research without stopping to redefine every goal and every process at every crossroad in the country."

Responding to the call for action, the National Center for Educational Communication, now part of the National Institute of Education, established various prototype "active dissemination systems" that build upon such knowledge bases as ERIC and PREP. In one of the most promising variations, implemented in three Pilot State Dissemination Projects (Oregon, South Carolina, and Utah), educational extension agents assist principals, teachers, and other educational personnel to formulate work-related problems in such a way that knowledge resources can suggest alternative solutions. Backing up the extension agents are retrieval specialists and other resource personnel at "extension headquarters" in each state capital.

Although federal support for active dissemination systems in education may wane while the National Institute of Education reviews its priorities for all types of programs, a number of states have taken the initiative to establish their own active dissemination systems with little or no federal support. Some of these systems involve extension agents, but most rely upon direct connections (e.g., "hotline") from school districts to a centrally located information retrieval facility.

STANFORD-SDC PROJECT   Although the "active dissemination
                         systems" may differ considerably in
products and delivery modes, all systems will require skilled
personnel, in many cases performing dissemination functions that
have little precedent in American education.   There is need to
design training programs for such personnel.   In June of 1972,
recognizing this need, NCEC awarded a contract to Stanford
University and the System Development Corporation to carry out
the following tasks:

1.   Review the literature on change processes in
     education and other fields, and identify linkage
     and transfer models.

2.   Examine the Pilot State Dissemination Projects
     and review evaluation evidence from their period
     of initial operation.

3.   Synthesize the findings of the above tasks into
     plausible alternative models for an educational
     extension service, and specify personnel
     functions within each model.

4.   Translate the specified functions into trainable
     behaviors.

5.   Survey extant training programs for extension
     personnel, and develop instructional materials,
     teaching methods, and training staff requirements.

6.   Summarize the findings of all the above tasks in
     a report to NCEC.

7.   Draft a plan for preservice and continuing
     education of educational extension personnel,
     and identify selection criteria for trainees.

8.   Provide training for specified personnel from
     various new projects, and evaluate the training
     in a report to NCEC.

9.   Review and revise prototype training materials
     after the training and training evaluation are
     completed, and turn cver to NCEC the final,
     modularized training package.

DESIDERATA   In our proposal to perform these tasks, eight
               desiderata were listed as guiding principles.
We reproduce them here, so that the reader can share our frame of
reference:

1. The "active dissemination system" should be
    approached in an experimental attitude, with
    planned or spontaneous variation of personnel
    roles, kinds of products delivered, support
    services, etc.

2. Limited federal resources should be extended
    by mobilizing state and local resources, including
    particularly the resources of colleges and
    universities, educaticnal R&D centers and
    laboratories, exemplary program sites, and
    divisions of the state education agency.

3. There should be a personnel multiplier effect.
    Personnel in linking roles should train others
    to be their "linkers," at least on a part-
    time basis. The potential clientele of more
    than 2 million educators cannot otherwise be
    served.

4. Whenever possible, new media and communication
    technology should be used to increase the cost-
    effectiveness of extension activities during the
    "awareness," "interest," and "pre-trial evaluation"
    phases of the diffusion process. For example,
    audio cassette "newsletters," tape-filmstrip,
    super-8 cartridge films, and local broadcasting
    (including school-based ITFS) facilities should
    be used to present images of potentiality
    (Ronald Lippitt's apt phrase) and validated
    alternative practices.

5. Transformation of the knowledge base should be
    emphasized as a support function. Just as the
    paramedic does not perform surgery, the extension
    agent should not be required to "get over his
    head" in the knowledge base. Instead, sets of
    "basic change alternatives" should be prepared
    to fulfill common requests in the next phase of
    information packaging beyond the NCEC-PREP and
    Colorado-PET materials.

6. Every effort should be made to create, in the
    extension service, a new professional specialty
    that attracts the best available manpower.

7. Traditional problems of marginality and overload
    should be removed from the extension agent's
    work experience by creating resources and an
    infrastructure not found in educational extension
    work up to this time.

8. The training program for extension personnel should be developed in the form of maximally independent modules, so that states and other sponsors of extension systems will have great flexibility in conducting preservice and inservice training of their own.

If the reader will juxtapose the nine tasks with these desiderata, he will view the Stanford-SDC project as we do.

II.   REVIEW OF MODELS OF EDUCATIONAL CHANGE

In Schein's terminology (1969), social change is effected by "unfreezing" an existing condition in some social system, "changing" that condition, and then "refreezing" the changed condition. "Refreezing" should not be confused with "rigidifying." Schein defines "refreezing" as the process of stabilizing and integrating changes so that the system can function normally.

It is important to note the psychological processes that are implied in "refreezing," because at this step educational change most often fails. That is, schools are quite "unfreezable" and "changeable." A large amount of random change occurs constantly. However, soon after change occurs, counter-change forces begin to reinstate the status quo. In such cases we say, somewhat glibly, that change was not "institutionalized."

Securing a trial for new practices leads only to the psychological process that Kelman, in his three-phase change model (1961), calls "compliance." Compliance is fairly easy to achieve and does not represent an enduring change tendency. Rather, the subsequent processes of "identification" and "internalization" provide support mechanisms for enduring change. It is these two phases that educational change founders upon.

Change theorists distinguish among a number of change strategies, ranging from the "empirical-rational strategy" to the "power-coercive strategy" (Chin & Benne, 1969). The power-coercive strategy achieves rapid compliance, but the empirical-rational strategy achieves long-term internalization. That is, the empirical-rational strategy builds support mechanisms that allow the change to persist after change pressure is removed, to the extent that arguments leading to the original change continue to be valid. In this review, we are inclined by the belief that means are as important as ends -- in fact, that the choice of means often determines ends in itself -- to consider only empirical-rational models.

Before proceeding, we must comment on certain other models and change-research "traditions" that we are not reviewing.

CATEGORIES OF EXCLUDED STUDIES   Despite our own interest
in several topics listed
below, we exclude them because they have no powerful role in
distinguishing, qualifying, or assessing alternative models.
However, these topics constitute practical knowledge for the staff
of an extension project. While we do not review them as
conceptual areas in our discussion of models, each area will be
covered at appropriate depth in the extension staff training
program.

1.   Internal dynamics of educational research and
      development. How research is done. Why it is
      done. The researcher's perception of a successful
      outcome. His perception of utilization. Source
      of research topics. Role of feedback from
      educational practitioners.

2.   Information processing habits of researchers
      and developers. Kinds of reports produced.
      Input and output information channels.

3.   Characteristics of new products/concepts as
      they affect adoption. Aspects of divisibility,
      communicability, etc.

4.   Characteristics of innovative and non-innovative
      educators. Personality traits, interpersonal
      relationships, organizational status, opinion
      leadership.

5.   Information processing habits of educators.
      How new practices come to their attention.
      Information needs they are aware of. Factual
      knowledge and belief change resulting from
      information processing.

6.   Internal dynamics of educational settings
      (schools, district offices, etc.). How work
      is done. Why it is done. How new practices
      relate to old ones. Factors facilitating and
      impeding the trial and adoption of new practices.

ASSUMPTIONS CONCERNING POLICY LATITUDE   Early in our
review of models
of educational change, we saw that we needed a consistent attitude
toward "radical" change proposals. It is a healthy sign in
contemporary American education that long-standing assumptions are
being questioned. Establishment and radical spokesmen alike are
proposing alternatives to traditional schooling that would have
been ridiculed as utopian a few decades ago. We may still
question the feasibility of "deschooling," "alternative schools,"

and "every home a school," but the acceleration of change in post-industrial society alters our question from "whether" to "when."

Radical change proposals are so sweeping that they trivialize the "incremental" changes proposed by moderate critics. That is, if we commit ourselves to the goal of deschooling society, then we do not strive to improve conventional schools. One must choose between the radical and incrementalist positions, or at least make a long-term/short-term distinction between them, before a particular set of change proposals seems to justify the effort of review, synthesis, and policy recommendation.

Without judging the long-term merit of radical change proposals, we find it necessary to project a set of assumptions concerning NCEC's prerogative to affect educational renewal throughout the rest of this decade. To the extent that these assumptions are misguided, then we have chosen the wrong change models.

1. Renewal cannot depend upon a radical restructuring of educatic or its community context. Deschooling and the alternative schools movement will have minor impact on the educational experiences of most children and adults throughout this decade.

2. Renewal cannot depend upon a great increase in educational expenditure. Even the shift from local to state funding will not relax the financial stranglehold. The federal government will undoubtedly increase its investment in large-scale R&D, but the per-student fraction of the investment will continue to be small.

3. Renewal cannot depend upon a major upgrading of the educational workforce. Even if significantly better methods of training teachers were introduced in every school of education this year, more than a decade would pass before the new teachers outnumber the old.

4. Renewal cannot depend upon R&D "magic." There is no learning pill in the offing -- just incremental improvements in content and technique.

5. As a corollary to #4, renewal cannot depend upon new communication technology in the classroom. After their intrinsic problems are solved, new media will inherit the content deficit that plagues the old media (which C. Ray Carpenter likens to "streamlined locomotives pulling empty boxcars").

If these assumptions are valid, an educational extension system must deal with educators possessing about the same competencies they now possess, located within an educational structure similar to the present one, inadequately funded vis-a-vis stated goals, and assisted only by non-magical R&D and technology. The most appealing vision of education cannot be achieved within such constraints, but much can be done if the constraints are recognized and accounted for.

DESCRIPTIVE VERSUS   We note a tendency in the educational
PRESCRIPTIVE MODELS   change literature to equate descrip-
                            tive and prescriptive models. In
fact the two kinds of models are quite distinguishable and serve different purposes.

Descriptive change models chart existing processes. They do not suggest new processes. Almost all studies in the tradition of diffusion research are descriptive. Such studies provide important data on adoption outcomes as affected by characteristics of innovations, change agents, adopters, and social settings.

ANTECEDENTS OF DESCRIPTIVE MODELS. As Katz noted in 1960, communication research and rural sociology almost simultaneously "discovered" the multi-step diffusion process within their separate traditions of research. In rural sociology, original concern for the adoption of agricultural innovations broadened into a general concern for social change, particularly in rural areas and small communities. The simple diffusion processes of seed, fertilizer, etc., gave the rural sociologists a clear vision of adoption stages, types of innovators, and other facets of the "classic" Lionberger-Rogers diffusion model (1960, 1962).

Communication researchers, usually working in urban settings, first focused on the effects of mass media, then realized that direct effects were small in comparison with interpersonally mediated effects. As communication researchers worked the interpersonal links into their model, diminishing the role of direct media effects, they found that they had developed a model similar to that of the rural sociologists. The models differ chiefly in the presence or absence of an innovation as a point of focus and tracing. In the interpersonal communication research model, information and persuasion flow from opinion leaders to opinion followers, and opinion leaders in one topic area become opinion followers in another.

As interest grew in the diffusion of innovations in urban settings, (formerly rural) sociologists and communication researchers found common cause. Everett Rogers, who embodies the rural sociology tradition, now teaches in the communication research department at Michigan State University. Elihu Katz and Herbert Menzel, students of Paul Lazarsfeld (one of the fathers of American mass communication research), have conducted distinguished studies of urban diffusion, targeting on specific

innovations according to the classic rural sociology paradigm.

The net effect of the intersecting of the two fields that Katz describes in his article, "Communication Research and the Image of Society: Convergence of Two Traditions," has been a strengthening and generalization of the diffusion model.

THE PENDULUM OF THEORY. In pre-war days the field of communication research was under the sway of the "hypodermic theory of mass communication effects." The hypodermic theory held that, if a member of the target audience were exposed to a message via the mass media, he would be infected by it. It was, after all, the era of Goebbels.

Reassessment of the persuasive power of mass communication began in the political studies of Lazarsfeld (1948, 1954), in which personal influence seemed decisive. Merton's "Rovere study" (1949) and the Katz-Lazarsfeld "Decatur study" (1955) were landmarks in an evolution of theory that led finally to Bauer's "The Obstinate Audience" (1964) and a new literature on selective exposure and resistance to mass media persuasion. This evolution is well documented in Schramm's "The Nature of Communication between Humans" (1971).

The pendulum swung too far from mass media effects during the period of "obstinate audience" research. The gadfly of communication research, Marshall McLuhan, set matters straight by contending that mass media create cognitive frameworks (akin to Lippmann's earlier "pictures in our heads," 1922, and Boulding's later "image," 1956). The importance of such cognitive frameworks was powerfully revealed in Lerner's study of modernization in the Middle East (1958).

Diffusion theory has to acknowledge that personal influence functions within these cognitive frameworks. At the present time, we find some consensus among communication researchers that early childhood socialization, education, and mass media are the three primary sources of cognitive framework (or "pictures" or "the image") in modern society. The ability of personal influence to catalyze action cannot overshadow the role of these primary diffusion systems in the life of modern man.

In summary, communication researchers now say that the mass media and interpersonal channels are simply different in their effects on cognitive structuring and attitude formation:

1. Mass media create our extended experiential world. The content of mass media today strongly affects the content of reality ten years from now.

2. Interpersonal channels bring us information on the immediately feasible, the immediately rewarding, etc. They provide risk-sharing and

other forms of support for personal change.
The content of interpersonal channels today
strongly affects the content of reality tomorrow
and a year from now.

Neither research on diffusion nor training of diffusion/
extension personnel can ignore the complementary, synergistic
nature of the mass media and interpersonal subsystems.

DISTINGUISHING FEATURES OF PRESCRIPTIVE MODELS. Prescriptive
models propose improved diffusion processes. Since the proposed
improvements have rarely been implemented, these are not usually
empirical models. In the absence of data, prescriptive models
must be evaluated on the basis of attractiveness and plausibility.
Implicit in their formulation, however, are contingencies for
field trial, evaluation, and revision.

Prescriptive models are "interventionist." The intervention
may be congruent with natural processes, or it may seek to alter
or nullify natural processes.

For example, most marketers to the general public operate
from a prescriptive model that confers all possible persuasive
power on the mass media, since the marketers recognize their lack
of control over interpersonal channels. On the other hand, Fuller
brushes, Tupperware, and Avon products are promoted via a
congruent prescriptive model. In medicine, pharmaceutical detail
men take over much of the mass media role of informing physicians,
since they are dealing with technically sophisticated products yet
cannot rely on the media to lay the groundwork for their sales
pitch.

It is significant that, with exceptions like Avon, marketers
recognize the cost/benefit problems of personal salesmanship. The
personal "sell" is practiced only where tradition demands it
(e.g., wholesaling) or where the unit cost of the product
justifies the time and effort to close a sale (e.g., automobiles).
Otherwise the marketer relies on the clerk in a multi-brand store
to present his product in a reasonably competitive way. Lack of
control over the clerk in a multi-brand store forces the marketer
to spend his persuasion dollars on the mass media, hoping that the
consumer will then enter the store with a favorable bias toward
the marketer's product.

Thus prescriptive models sometimes confer personal functions
on the media (selling cornflakes), sometimes confer media
functions on personal channels (informing physicians about drugs),
and sometimes swim with the tide (informing housewives about Avon
products in the media, but selling them personally).

Every sound prescriptive model accommodates the findings of descriptive diffusion research. For example, no prescriptive model worth considering would postulate a one-step flow of information (against the data on multi-step flow) or simultaneous adoption of an innovation by the majority of a population (against the data on adoption curves). Descriptive models are the point of departure for prescriptive models. The ultimate success of a prescriptive model depends on its accommodation of findings from descriptive research.

In summary, prescriptive models follow from descriptive models in the same way that aeronautical models follow from the Newtonian gravity model. In each case there is a natural process that must be respected. Yet, if respect for the natural process inhibits intervention, the airplane won't be engineered to leave the ground.

FOCUS ON PRESCRIPTIVE MODELS. We have attempted to clarify, above, the distinct roles of descriptive and prescriptive models of change. It is dismaying to conclude that the strong descriptive literature has little to offer our project. Specifically, there are few guidelines for change in the Lionberger-Rogers "classics." Nor from the powerful Coleman-Katz-Menzel study of medical innovation (1966). Nor even from such major works in the educational change literature as Carlson (1965), Evans (1967), Goldhammer and Farner (1964), Haber (1963), Mort (1964), etc. The role of these descriptive studies is not to suggest prescriptive models, but to reflect on the plausibility and attractiveness of prescriptive models that have been suggested otherwise.

Except for prescriptive models that we can extrapolate from the descriptive literature ourselves, we depend upon a much weaker prescriptive literature for the range of models that follows.

A TAXONOMY OF PRESCRIPTIVE MODELS   Educational change must ultimately be apparent in students' learning experiences, but each desirable outcome may have originated at a remote point in the educational system -- e.g., in a research laboratory. In some cases the outcome is clearly traceable to its origin. In other cases the origin, or the causal linkage between outcome and origin, is obscure. We classify a change model according to the locus or origin of change, while the outcome (in its quantity and quality) reflects on the effectiveness of each model.

After many years of both spontaneous and programmed R&D, the educational system is poised for change. Promising alternative practices abound. Administrators and teachers are increasingly able to approach their work-related problems analytically rather than intuitively. There is money at large to support change experiments.

THREE LOCI OF CHANGE. Under such conditions, a change intervention may occur at any point in the educational system with some promise of success. Generically, the loci of change interventions are:

1. The knowledge-production system, or, more simply, the resource system. This system encompasses universities, research laboratories, product developers in the commercial sector, innovative schools, etc.

2. The knowledge-utilization system, or, more simply, the client system. This system encompasses administrators, teachers, ancillary services personnel -- in short, all educators "on the front line."

3. The dissemination-facilitation system, or, more simply, the linkage system. This system encompasses all personnel, media, and organizations that link client systems to resource systems. Such "linkers" may disseminate knowledge only, or they may facilitate the entire process of diagnosing problems, searching for alternative solutions, choosing an alternative, and installing the new practice.

This review deals with models of educational change in which the intervention first affects: (1) the resource system, (2) the client system, and (3) the linkage system. Of course, because of the interconnected nature of educational development and practice, change that first affects one system will thereafter affect other systems. We can therefore maintain that an intervention, wherever it occurs, is ultimately tested by its effect on students' learning experiences.

INTERVENTIONS IN
THE RESOURCE SYSTEM

It is part of the American folklore that scientists and developers give us better things for better living and rescue us from predicaments. It was inevitable that the National Defense Education Act of 1958 -- in many ways the legislation that launched the present era of planned educational change -- placed greatest emphasis on educational R&D. Authorizations since NDEA have channeled additional tens of millions into R&D, but there is widespread dissatisfaction with both process and product.

Suggested interventions in the resource system include, at the level of individual scientists and developers: (1) creating a "utilization spirit," and (2) improving quality of research.

Interventions have also been proposed at the level of: (3) establishing group or structural arrangements for utilization, such as a utilization office within a research laboratory.

1. CREATE A "UTILIZATION SPIRIT." The National Science Foundation, generally bland in its statements that reflect upon scientific disciplines, published a remarkably candid appraisal of social science utilization (1969) that stated: "Well-recognized obstacles to the utilization of social science knowledge lie within the social sciences themselves, and social scientists must share the blame for the failure to apply social science more broadly. Most professional social scientists are employed in academic institutions where their nonteaching activities are focused on their academic institution and their research. The research emphasis is on the building up of the basic theoretical structure of the disciplines. And the social scientist who works on applied problems is often viewed as a second-class citizen -- regarded by his academic peers as inferior to colleagues who do basic research. ... When faced with a specific problem that has no ready-made conceptual answer. (social scientists) frequently retreat to the laboratory for mc research and more facts. But the client would ordinarily settle for less than a scientifically adequate answer."

The NSF report specifically criticizes Coleman's study, "Equality of Educational Opportunity." It comments: "The Coleman Report shows that, on the average, Negroes come into school behind whites, and leave school even farther behind whites, in terms of educational achievement. The social implications of this finding are enormous. But the Coleman Report does not propose measures to remedy this problem since that was not its purpose; it merely reports a disheartening set of facts."

In a similar vein, Paisley (1972) documents how researchers involved in the NIMH project, "Television Violence and Children's Aggressive Behavior," accepted the policy-research funds but largely continued their theoretical research. When the time came to make policy recommendations, it became clear that little of the research had focused on policy alternatives.

INTERVENTION. Train researchers and developers to view utilization as an important outcome of their work. Clarify differences in approach between theoretical studies and policy studies. Award policy-research funds only to researchers who can and will do policy studies.

Continuing education in the form of conference presessions and summer workshops may serve this purpose. Simultaneously, the National Institute of Education should convene its proposal review panels to formulate a set of criteria governing "fundable educational policy research." The criteria should enable proposal reviewers to detect in advance when research cannot be linked to

the client system.

2.   IMPROVE QUALITY OF RESEARCH.   Weaknesses of educational
research have been criticized and documented by Campbell & Stanley
(1963), Gephart (1965), Guba (1964), etc.   Clients have legitimate
doubts about the validity of research and development that they
are expected to translate into practice.

INTERVENTION.   Train researchers to conduct research of
higher validity, with particular concern for external validity or
generalizability from the laboratory to educational settings.

Continuing education in the form of conference presessious
and summer workshops may serve this purpose also.   Perservice
training programs like those established by Wolf (1972) can raise
competence levels at entry to research careers.

There is need for high-level consultation (e.g., from
educational research methodologists under the aegis of NIE) to put
research projects back on the track after difficulties are
encountered or, better, to guide them properly from the outset.

There is also need for tough-minded criticism of defective
research, preferably in the most visible dissemination channels.
The social sciences presently have a norm of tender-minded
criticism; most tough-minded critiques are buried in
methodological journals.

3.   CREATE UTILIZATION OFFICES WITHIN THE RESOURCE SYSTEM.
If it is cost/inefficient to divert the researcher's efforts
extensively into utilization assistance, another solution is to
create utilization units within the resource system.   For example,
NSF (1969) proposes a network of Social Problem Research
Institutes that serve "client-sponsors" and work to implement
solutions through publications, demonstrations, "traveling
seminars," and cooperative arrangements with federal-state-local
agencies.

Such units would resemble the marketing division of a
manufacturing company.   When an R&D product is ready for
large-scale implementation, researchers and developers turn it
over to the utilization office.   Drawing upon a continuing data
series on client needs, the utilization office identifies
strategies for reaching the product's target audience.   Field
trial arrangements and installation assistance would be additional
responsibilities of the utilization office.

Several of the regional educational laboratories are now
joining forces in a utilization consortium whereby each will
provide field training and technical assistance on behalf of the

products of all. By distributing the technical assistance load by
region, the consortium should allow each laboratory to develop a
true, multi-purpose utilization office.

INTERVENTION. Create a utilization office within each
resource organization. Train utilization personnel to man these
offices, to demonstrate products and assist clients through the
field trial and installation phases.

RELEVANCE OF RESOURCE SYSTEM INTERVENTIONS TO THIS PROJECT.
It is conceivable that cadres of utilization-oriented researchers
could close the gap between research and practice. However,
doctoral-level researchers are expensive linkers. Even if some
could be attracted into linking roles, their salaries would be a
stumbling block. Perhaps the most we can ask of researchers is
well-focused policy research, combined with enough client contact
to provide technical assistance in one direction and feedback in
the other.

As for proposals to improve quality of research, studies of
utilization show little difference in the utilization rate of
"good" and "bad" research. Although improvement in the quality of
research is needed for its own sake, there is little promise that
better research per se would lead to greater utilization.

Establishment of utilization offices within resource
organizations would certainly be welcomed by clients who are
already familiar with a range of products, have chosen particular
products for field trial and installation, and now need technical
assistance from product experts. However, the number of
educational R&D organizations is very great, and we doubt that
clients could cope with a full network of utilization offices. It
would be better if utilization consort a expand and lead
eventually to a "capping agency" for utilization in the resource
system.

INTERVENTIONS IN THE RESOURCE SYSTEM: SUMMARY. Of course we
hope that educational R&D will in the future be characterized by a
"utilizatior spirit," improved research quality, and arrangements
for utilization in the form of a utilization office within each
resource organization or a "capping agency" for utilization across
many resource organizations. However, we feel that these
interventions per se wi'l lead to less educational change "per
dollar" than other inte:ventions that are closer to the client
system.

INTERVENTIONS IN The number and diversity of suggested
THE CLIENT SYSTEM interventions in the client system
         stand in contrast to the above, rather
limited interventions in the resource system. Recalling our
criteria for judging non-empirical models, we would also say that
interventions in the client system are more plausible and
attractive.

Suggested interventions include, at the level of individual
educators (continuing numerical sequence from the previous
section): (4) improving information processing and decision
making competencies, (5) redefining the utilization roles of
existing school and district personnel, and (6) creating new roles
with utilization responsibilities.

At the level of group change and structural arrangements,
suggested interventions include: (7) establishing committees and
task forces for information processing and decision making, (8)
establishing a utilization office within a school or district, and
(9) establishing consortia of schools to share knowledge and
initiate change experiments.

4. IMPROVE INFORMATION PROCESSING AND DECISION MAKING
COMPETENCIES. Some educational change specialists, notably Jung
(1967, 1968), emphasize the importance of training educators to
analyze work-related problems, gather data and information bearing
on problems, derive implications and action alternatives, and
choose a course of action. The two major assumptions of this
approach are: (a) process skills are a key to change, and (b)
such skills are amenable to inservice training.

Jung's RUPS (Research Utilization and Problem Solving) System
is an instructional system appropriate for training the entire
staff of a school or district. A possible training leader is
Jung's "trainer-change agent," whose inservice training role is
quite different from that of the professor in summer school.

INTERVENTION. Train educators in appropriate techniques
(e.g., systems analysis, force-field analysis) to analyze work-
related problems and proceed through information processing to
decision making. Local workshops have been used effectively.
Media packages are an alternative if a local training leader is
not available.

5. REDEFINE THE UTILIZATION ROLES OF EXISTING SCHOOL AND
DISTRICT PERSONNEL. This intervention assumes that change is an
organizational function, like hiring and purchasing. As such, it
needs a supervisor or expediter.

Educational change researchers seem to agree that change responsibility should lie where the power is. Pellegrin (1966) notes the "impressive evidence concerning the power and influence of the superintendent," to the extent that he "is currently viewed by researchers as the key figure in the innovation process at the local level." On the other hand, in Pellegrin's view, the principal "is burdened with such a multitude of managerial activities that it is extremely difficult for him to devote the time and effort required for innovation on a substantial scale."

Chesler, Schmuck, & Lippitt (1963) concluded otherwise: "Our research has shown the importance of the principal in the development of creative classroom practices ... the principal plays an important role in stimulating creative classroom teaching. There is a high and significant correlation between the amount of staff innovativeness and the staff's perception of the principal's support for innovative teaching. Thus the principal's attitudes influence staff norms, and both his orientation and peer standards combine to influence actual staff innovativeness."

INTERVENTION. Define "improved instruction" and "improved educational management" as accountability dimensions. Assign responsibility for them to administrators at each level. Also provide a support structure for identifying potential changes and initiating change experiments.

6. CREATE NEW ROLES WITH UTILIZATION RESPONSIBILITIES. We carry over the premise of #5 that change requires an on-site facilitator. It may be, however, that no existing personnel role has enough latitude to supervise or expedite change. One solution then is to create a new personnel role specifically or primarily for utilization.

One example of a new role is the "learning specialist" (Klausmeier, 1966). Such a person is said to assume leadership in the development and evaluation of instructional programs, coordinate the diagnosis of learning problems, plan and coordinate research, innovate materials and procedures, and diffuse information about new practices.

We can also conceive the utilization analogue of an audiovisual "building coordinator." In this pattern, the utilization specialist would not be developing or evaluating instructional programs, nor diagnosing learning problems, planning or coordinating research. Instead, responsibilities of the role would focus on information services and assistance throughout the decision making process.

INTERVENTION. At the school or district level, create a new personnel role charged with facilitating change. Provide support for these activities in the educational infrastructure (e.g., space, clerical assistance).

7. ESTABLISH COMMITTEES OR TASK FORCES FOR UTILIZATION.
Parallel with #5, the redefinition of existing roles to encompass
utilization, there are structura_ changes in the school that
realign existing personnel into committees o: task forces for
utilization.

One example is the Research and Instructional (R&I) Unit
concept developed by Klausmeier (1966). With the exception of the
learning specialist or unit leader who coordinates the activities
of each R&I Unit, the difference between an R&I Unit and
conventional teaching arrangements lies in task distribution
rather than individual personnel roles or competencies.

A typical elementary R&I Unit is composed of a unit leader,
two or more certified teachers, one instructional secretary, and
one teacher aide for each 100-150 pupils from two grade levels.
At the secondary level, R&I Units follow subject-matter divisions.
Each R&I Unit is responsible for conducting intramural research
and developing instructional programs, drawing upon extramural
research findings in the process.

INTERVENTION. Realign existing personnel in the structure of
a committee or task force for utilization. Each person continues
to perform many of the same tasks as before, but the group is also
responsible for exploring alternative practices of both intramural
and extramural origin.

8. ESTABLISH A UTILIZATION OFFICE WITHIN A SCHOOL OR
DISTRICT. Parallel with #6, the creation of new roles for
utilization, there are structural changes at the school or
district level that create new offices for utilization. We
distinguish model #7 from model #8 on the number of new personnel
roles required by each. The former reassigns existing personnel.
The latter requires new personnel, usually with research or
information dissemination competence.

An example of #8 structural change is the "school research
office" studied by Mosher (1968). Although a majority of large
school districts have school research offices, they are thinly
distributed across small districts. In all, a minority of U.S.
school districts have any provision for conducting internal
research or utilizing extramural research findings.

Variations of this pattern are the "local school change agent
team" (Goodson & Hammes, 1968), "research implementation teams in
education" (RBS, 1968), and "field stations" of the Social Studies
Diffusion Project (CEMREL, 1968).

INTERVENTION. Establish a utilization office at the school
or district level. Hire personnel to fill new roles in
supervising or expediting change. Provide infrastructure support
(space, clerical assistance).

9.   ESTABLISH CONSORTIA OF SCHOOLS FOR UTILIZATION. Without subsidy, individual schools rarely can afford new personnel for utilization, and small school districts are scarcely in a better position. The idea of multi-school consortia for utilization therefore has great appeal.

There are two major variations within the consortia model. In some cases a university will actively and programmatically affiliate itself with a consortium as a resource for consortium members to draw upon. Jung et al. (1967) sketch a COPED plan for three kinds of university-school relationships within a consortium: (a) information-affiliate systems, (b) diagnostic-affiliate systems, and (c) action-research collaborating systems. Within each of these system, functions are assigned to a "university team" and "school system team" as they work together.

The model of consortium-with-university-affiliate has been tested in various states. One long field test involved Colgate University and 26 schools in the Hamilton, New York, area. A carefully screened set of 31 innovations were variously discussed, demonstrated, implemented, and evaluated in the schools over a five-year period (Schlesser et al., 1971). Several other universities serve as active affiliates in consortia.

In other cases the schools are more on their own. University affiliates, if the consortium has any, play a less active role in implementing change.

The "study council" movement has led to various consortia arrangements in many states. Examples include the East Texas School Study Council, with 35 member school systems; the Fox Valley (Wisconsin) Curriculum Study Council, with 18 member school systems; the Northeastern Indiana School Study Council, with 10 member school systems; and the Philadelphia Suburban School Study Council, with 62 member school systems.

Donley et al. (1965) documented some problems associated with the school study council movement:

    (a)   Established central office procedures did not
           insure that information reached the appropriate
           school personnel.

    (b)   Information sent to schools frequently was not
           forwarded to the personnel most interested or
           concerned.

    (c)   With the pressure of diverse responsibilities,
           collection of research and related information
           in the central office tended to be erratic.

(d)   Practitioners frequently lacked the knowledge
        or training to read research reports critically
        and with understanding.

(etc.)

INTERVENTION. Using deficiencies in the school study council
movement as guidelines, establish consortia of schools that
facilitate the sharing of knowledge and the experimental
introduction of change. Provide a base of operations, a specific
liaison person in each school, and a mechanism for financial
support based on enrollment or other criteria.

RELEVANCE OF CLIENT SYSTEM INTERVENTIONS TO THIS PROJECT.
Despite the obvious value of Jung's RUPS skills to educators, w.
question whether systematic information processing and decision
making will take place without: (a) the assistance of a linker,
such as a field agent, and (b) an institutional norm for problem
analysis.

We should distinguish between first-phase interventions,
regarded as prerequisite to later phases of planned educational
change, and later interventions. An intervention to improve
information processing and decision making skills probably belongs
to a later phase.

Models #5 through #9 could all be implemented in the first
phase. Given existing overloads on educational personnel, the
combination of models #6 and #8 seems more promising than the
combination of #5 and #7.

The probable success of model #9 depends on the prototype
being followed. Some school study councils are paper
organizations that have no "track record." Others have achieved
limited success -- for example, securing local trial of selected
innovations. One intrinsic shortcoming of this model is the
assignment of linkage responsibilities to a unit within the client
system that is not structured or financed to accept the
assignment, nor skilled in linkage tasks.

INTERVENTIONS IN THE CLIENT SYSTEM: SUMMARY. There is no
question that planned educational change requires a reorganization
of the client system, as well as new attitudes and new skills. A.
"go it alone" spirit and "seat of the pants' problem solving
should now give way to collaborative arrangements to analyze
problems and explore alternatives.

Models #4, #6, and #8 are a "package" that should be
implemented as soon as the educational infrastructure, including

the linkage system, is ready for them. At that time, the new
utilization offices and personnel will be important nodes in the
network that spans the resource system and the client system.
Also at that time, educators who have RUPS skills will be better
prepared than most educators now are to understand and criticize
empirical research underlying new practices.

INTERVENTIONS IN   All linkage models imply structural
THE LINKAGE SYSTEM   change, since the linkage system is
                          "artificial," not "natural" in the
sense that the resource system and client system are. Some
structures (e.g., libraries) have long existed in the linkage
system, but none of these is an adequate model for educational
extension in its present form.

Structural change is therefore a constant in our suggested
linkage system models. Other constants across the models are:

1.   All models imply the availability of full knowledge
      resources. At a minimum these resources would
      include ERIC, a journal collection, major books
      on education, synthesized knowledge products like
      PREP and PET, and a vertical file of "fugitive
      materials" like brochures describing innovative
      products.

2.   All models imply a full range of information roles,
      from current awareness and continuing education
      to specific problem solving and technical assistance.
      However, while fulfilling all roles, some models
          emphasize a subset of roles. Some, by virtue
      of their organization, will be able to fulfill
      particular roles better than others.

3.   All models are non-entrepreneurial. It is assumed
      that the linkage service is being provided by a
      state or local education agency or a non-profit
      organization like a professional association.

4.   Further, it is assumed operating costs are
      subsidized by government or other sources.
      None of the nine linkage models discussed below
      could recover its operating costs on a fee-for-
      service basis.

The major variables, or dimensions of difference among the
models, are:

1.   "Targets" of the linkage service may be:
      (1a) individuals, (1b) groups.

2. Occurrence of the linkage services may be:
    (2a) episodic -- that is, occurring whevever
    a client makes a request, (2b) scheduled --
    that is, occurring at times that are planned
    for maximum effectiveness by the linkage
    organization.

3. The "delivery system" of the linkage services
    may be: (3a) print materials, (3b) media
    materials, (3c) people.

4. Products of the linkage service may be:
    (4a) citations and/or abstracts, (4b)
    primary information, (4c) synthesized or
    compressed information, (4d) answers to
    specific questions.

The 36 combinations of these variables are illustrated on the next
page.

Some of the 36 cells in the matrix represent plausible
linkage models in themselves. For example, HPIE ("human delivered
primary information for individuals in response to specific
requests") is a model in which a field agent (or other "human
delivery system") retrieves and delivers full-text documents in
response to each request from individual clients. This is an
expensive model, because the client is probably receiving a number
of documents he doesn't want. Providing the client with citations
and/or abstracts (HCIE), prior to HPIE service, is an important
economy measure; client screening reduces the bulk of each HPIE
package.

Other cells in the matrix are not integral linkage models.
HCIE service does not qualify as a linkage model in itself; it
lacks follow-through. It needs to be articulated with at least
HPIE service, and preferably HSIE and HAIE service also.

Out of the matrix of 36 linkage services, we have selected, 9
"service clusters" that represent integral linkage models. It
should noted, also, that the entire matrix represents a "super
linkage model" that could be implemented in a few states that have
large educational communities, geographically clustered services
(e.g., BOCES in New York, ESC in Texas), and prototype educational
communications networks (e.g., the ETN-SCA-SEEN systems of
Wisconsin Extension).

FIGURE II.1   COMBINATIONS OF SERVICES THAT CHARACTERIZE
              LINKAGE MODELS.

	TARGET:	Individuals		Groups	
	OCCURRENCE:	Episodic	Scheduled	Episodic	Scheduled
DELIVERY SYSTEM:	**PRODUCTS:**		(Code:)		
	Citations/ Abstracts	PCIE	PCIS	PCGE	PCGS
	Primary Information	PPIE	PPIS	PPGE	PPGS
Print	Synthesized Information	PSIE	PSIS	PSGE	PSGS
	Answers	PAIE	PAIS	PAGE	PAGS
	Citations/ Abstracts	MCIE	MCIS	MCGE	MCGS
	Primary Information	MPIE	MPIS	MPGE	MPGS
Media	Synthesized Information	MSIE	MSIS	MSGE	MSGS
	Answers	MAIE	MAIS	MAGE	MAGS
	Citations/ Abstracts	HCIE	HCIS	HCGE	HCGS
	Primary Information	HPIE	HPIS	HPGE	HPGS
Human	Synthesized Information	HSIE	HSIS	HSGE	HSGS
	Answers	HAIE	HAIS	HAGE	HAGS

The nine models discussed below emphasize structural change and new personnel roles, establishing: (10) a print-based individual request fulfillment system, (11) a print-based scheduled services system for current awareness, (12) a print-based scheduled services system for continuing education, (13) a media-based individual request fulfillment system, (14) a media-based group request fulfillment system, (15) a media-based scheduled services system for current awareness, (16) a media-based scheduled services system for continuing education, (17) a human-based individual request fulfillment system, and (18) a human-based scheduled services system for continuing education.

10. ESTABLISH A PRINT-BASED INDIVIDUAL REQUEST FULFILLMENT SYSTEM (PCIE, PPIE, PSIE, PAIE). The traditional role of an "information center," such as those established in many parts of the country by the Department of Defense, is to provide print response to individual queries. If information retrieval and response packaging are cost-optimized, this model can be the least expensive of the individual request fulfillment systems.

The concept and organization of an information center have been discussed authoritatively by Weisman (1972). He also provides a useful summary of services performed by 119 information centers listed by the federal Committee on Scientific and Technical Information (COSATI). Some of the services, and the number of centers associated with each:

"Collects, maintains, stores, and retrieves
information and data   90

Analyzes, synthesizes, and evaluates
information and data   49

Prepares accession lists, bulletins, newsletters,
summaries and/or directories   28

Maintains register of research in field   5

Performs literature searches   19

Provides replies to queries   68

Provides bibliographies and references   49

Provides abstracts, indexes, extracts   12

Provides reprints (xerox or microform)   9

Provides critical reviews, monographs,
reports and/or correlations   24

Provides critical compilations   30

Provides state-of-the-art reports   43

Selective dissemination of information   15

Referral service   3"

Sovel's (1969) evaluation of a NASA regional dissemination center is useful because it shows how services are consumed by a typical group of users. Van Cott and Kinkade (1967) report a test of various input mode, in the operation of an experimental biological information center. Other studies and essays dealing with information centers are cited in appropriate sections below.

INTERVENTION. Establish a print-based information center at a convenient location within the region served. Equip the center with ERIC and other knowledge resources. Staff the center with a manager, retrieval specialists, and clerical personnel.

INPUT. Individual query by mail or telephone. Other input systems possible (e.g., TWX) but more e: iensive with little enhancement of response. Query is "negotiated" by telephone or mail if ambiguity exists.

PROCESS. Search knowledge base. Retrieve information matching query. Package response.

OUTPUT. Citations and/or abstracts, primary information, synthesized information, answers to specific questions.

DELIVERY MODE. Mail or telephone.

SUBSEQUENT ACTION. Generally, transaction is considered complete when response package leaves the information center. The client may be asked to indicate satisfaction with service provided. However, "the ball is back in his court" for additional services.

11. ESTABLISH A PRINT-BASED SCHEDULED SERVICES SYSTEM FOR CURRENT AWARENESS (primarily PCGS). The manager or governing board of an information center may feel that individual request fulfillment is an inordinately expensive procedure, particularly when a number of requests are repetitive and could be fulfilled with an "off the shelf" service. Models #11 and #12 try to achieve economies of scale by shifting from individual request fulfillment to group services 'at are intended to be no less useful.

The common request, "What's new?", can be satisfied by a current awareness system, if some mechanism exists for bringing only relevant new developments to each client's attention. This mechanism, as developed over the past 15 years, is called

"selective dissemination of information," a name first proposed by Luhn (1958).

The heart of a selective dissemination of information, or SDI, system is its categorization of clients. If clients are correctly categorized according to needs and interests, the SDI system will bring relevant developments to their attention and will be appreciated. Incorrect categorization leads to irrelevant apprisals, which in turn cause the service to be ignored.

In SDI terminology, categorization of clients is called "interest profiling." Weisman (1972) discusses the creation of interest profiles and the procedure of matching such profiles against relevant characteristics of new developments (e.g., research reports). Simple matching is deterministic, leading to binary relevance decisions, while complex or weighted matching is probabilistic, leading to a rank ordering of poor, good, better, and best matches per client. The latter approach generally requires computer support.

SDI was originally proposed as an individual service (e.g., for scientists and engineers within an organization). The cost of preparing entirely individualized SDI announcements did not seem to be justified by the slight differences that existed among some client profiles. Individual SDI is thus almost universally supplanted by group SDI, and the subtlety or responsiveness of an SDI system is measured by the number of distinct groups it serves. In group SDI, a potential client is apprised of the profiles of groups he may wish to "join." He may find that a single profile captures his current interests, or it may be necessary for him to request the SDI announcements of two or more groups.

INTERVENTION. Same as #10, but with less retrieval staff and more editorial staff.

INPUT. The center does not solicit requests for individual searches. Instead, it invites each client to register a profile of needs and interests. Properly constructed, a profile indicates not only subject matter but also intended applications of information. Thus the teacher who needs "how-to" information is not apprised of complex research reports, nor the researcher vice versa.

PROCESS. Aggregate individual interest profiles into no more than 50 group profiles (a single client may "join" more than one group). Monitor new literature and events in education. Create a bibliographic and factual file covering the immediately past month. Assemble various sections of the file as separate SDI announcement packages.

OUTPUT. For each group interest area, a monthly newsletter/announcement bulletin that lists the pick of current documents, provides a simple procedure for ordering the documents, and reports selected developments -- particularly at the SEA/LEA levels -- of interest to educators in the group.

SUBSEQUENT ACTION. The client is asked to indicate satisfaction with service provided. He is prompted to update his interest profile periodically. The information center stands ready, also, to supply various back-up packages if the client requests further information on a topic mentioned in the monthly bulletin.

12. ESTABLISH A PRINT-BASED SCHEDULED SERVICES SYSTEM FOR CONTINUING EDUCATION (primarily PSGS). The term "continuing education" has very broad definition. In this model it denotes an educator's use of information to learn or relearn some professionally relevent content area. The intended contrast is with episodic, problem-solving use of information (model #10) and with current awareness use of information (model #11).

Continuing education usually conjures the image of evening classes, summer school, workshops, etc. However, well-synthesized print resources have always had a major role in continuing education. What the National Center for Educational Communication calls its "Targeted Communication Program" (PREP) is a large-scale and apparently successful continuing education effort.

INTERVENTION. Same as #11, but with subject-matter experts available to the information center.

INPUT. Since it does not solicit requests for individual searches and cannot use client profiles for highly specific purposes, the information center operates a "sensing network" to identify priority topics on which syntheses should be prepared. At any moment, the center should be planning its publication schedule from a rank-ordered topic priority list, which will change slightly with each new input from the "sensing network."

PROCESS. Within each production cycle (e.g., one week, with multiple projects in motion at one time), review the topic priority list and choose one topic for information synthesis. Assemble literature bearing upon the topic. Consult with subject-matter experts to capture and reflect current thinking. Prepare synthesis and publish for distribution to particular groups of clients according to interest profiles. Prepare "on the shelf" back-up resources to fulfill requests for further information.

OUTPUT. The synthesis is published in the form of an "information brief," probably in loose-leaf format for convenience of use by the client. A simple procedure is indicated for ordering back-up materials.

SUBSEQUENT ACTION. Satisfaction monitoring. Fulfillment of requests for back-up materials.

13.   ESTABLISH A MEDIA-BASED INDIVIDUAL REQUEST FULFILLMENT
SYSTEM (primarily MCIE, with MPIE and MSIE back-up). It is
desirable for information seekers to have direct access to a
knowledge base. However, it is difficult to provide direct access
to the files of an information center for two reasons: (a) the
information center is a workshop and not an archive; at any moment
a considerable number of materials will not be "on the shelf;" (b)
many information seekers (clients) live and work an inconvenient
distance from the information center.

The most direct link between an information center and its
clients, short of on-site browsing, is a computer retrieval
system. After a decade in which the promise of such systems was
exaggerated relative _o capability, computer retrieval systems are
now a practical solution to problems of remote access. Two
on-line systems, DIALOG and ORBIT, are already serving educators
in several locations.

For nearly 30 years, computer information specialists have
been pursuing a Holy Grail bearing the unlikely name of MEMEX.
The crusade was declared in 1945 by Vannevar Bush (1967):

Consider a future device for individual use, which
is a sort of mechanized private file and library. It
needs a name. To coin one at random, "memex" will do.
A memex is a device in which an individual stores all
his books, records, and communications, and which is
mechanized so that it may be consulted with exceeding
speed and flexibility. It is an enlarged intimate
supplement to his memory. What does it consist of?

It consists of a desk. Presumably, it can be
operated from a distance, but it is primarily a piece
of furniture at which an i dividual works. On its top
are slanting translucent screens, on which material
can be projected for convenient reading. There is a
keyboard, and sets of buttons and levers. Otherwise,
memex looks like an ordinary desk.

In one end is its stored reference material.
The matter of bulk can be well take care of even by
present-day miniaturization. Only a small part of
the interior of the memex is devoted to storage, the
rest to mechanism. Yet if the user inserted 5,000
pages of material a day it would take a hundred years
to fill the repository. So he can be profligate and
enter material freely.

. . . . .

Memex has, of course, provision for consulting
the record by the usual scheme of indexing. When the
user wishes to consult a certain book, he taps its

code on the keyboard, and the title page of the book
promptly appears before him, projected onto one of
his viewing positions. Frequently used codes are
mnemonic, so that he seldom consults his code book;
but when he does, a tap of a key or two projects it
for his use. Moreover, he has supplemental levers.
By deflecting one of these levers to the right he
runs through the book before him, each page in turn
being projected at a speed which just allows a
recognizing glance at each. If he deflects the lever
further to the right he steps through the book 10
pages at a time; still further speeds scanning to 100
pages at a time.

Bush continues with a discussion of "trail-building" in the
file, a procedure by which the user combines knowledge resources
in a pattern that serves his purpose at a particular moment; the
pattern can be extended, changed, or erased at any time. Hundreds
of trails can run through the same knowledge resources at the same
time.

In 1967, Bush comments, "Now, is all this a dream? It
certainly was, two decades ago. It is still a dream, but one that
is now attainable ... because of the great advances that have
already been made in mechanization, the instruments that have
already been built in great numbers to aid man's computations and
his thoughts, the devices already used for storing and consulting
masses of data, the ingenious elements of electric and magnetic
circuits that have been developed during the last two decades."

Virtually the entire MEMEX device can now be assembled and
demonstrated in the laboratory. However, several of its features
-- chiefly those involving the user's ability to insert notes or
"trails" in the document file -- are too expensive to be
incorporated into a marketable product.

The information center's client can get by with less than
MEMEX. All that is required for individual request fulfillment
via computer is a typewriter terminal, a machine-readable file
like ERICTAPES, and a processor (e.g., DIALOG, ORBIT) that can
execute and guide the user's search. The computer memory may
store only citations and abstracts, or information syntheses as
well, or even the full text of primary documents. However, it is
generally more satisfactory, both in terms of cost and image
quality, to retain the full text in microform (small cabinets next
to the computer terminal will suffice) and display it on a
microform reader rather than the terminal.

OTHER DELIVERY MEDIA. When relevant information has been
identified and needs to be delivered to the client more quickly
than is possible via mail or human courier, several media delivery
systems are capable of performing this function.

Rath et al. (1969) describe the successful operation of a facsimile transmission system for medical researchers, based in the John Crerar Library, Chicago. Bretz (1971) presents a taxonomy of media that can be used in this capacity -- that is, are characterized by rich display relative to bandwidth required for transmission (facsimile has this characteristic; ordinary television does not). Telewriting, still TV, and slow-scan TV are just three systems capable of delivering information from an information center over standard bandwidth phone lines.

The difference should be noted, however, between a medium that can search and deliver (the computer) and media that can only deliver (facsimile, telewriting, still TV, slow-scan TV). The latter are only stand-ins for a fast mail service or human courier, but the former is capable of providing better access to knowledge resources than any other interface.

INTERVENTION. Establish a computer-based information center at a location within the service area where optimum computer support is available. Obtain machine-readable files like ERICTAPES. Deploy computer terminals at each location in the service area where 100 clients can be served, so that the cost of service (including computer connect time) stays below $5.00 per client/month. Instruct clients in the use of a searching system like DIALOG or ORBIT. To fulfill full-text requests, maintain local microfiche files.

INPUT. Search request formulated and "negotiated" at the computer terminal.

PROCESS. (Computer:) Provide assistance in formulating request, including tutorial on coordinate searching and display of indexing system to show client what the access possibilities are. Search knowledge base. Inform client of number of documents posted to each term or combination of terms in the search formulation. Display sets of document citations/abstracts to client as requested.

OUTPUT. Hard copy of citations/abstracts finally chosen by client as meeting his needs.

DELIVERY MODE. Printed at terminal in real time or printed offline at end of day and mailed (or hand delivered) to client.

SUBSEQUENT ACTION. Full-text resources are available locally in microfiche. "Pulling" microfiche to match search output is done by a clerk, such as a student library assistant. Optionally, an information specialist, located in the information center, reviews the final set of citations/abstracts selected by the client and identifies knowledge syntheses (such as PREP) in the same topic area. Such syntheses can be held in abundant stock and routinely mailed to clients according to probable interest. Satisfaction data are collected at the computer terminal at the end of each search, as well as by questionnaire in quarterly or semi-annual cycles.

14. ESTABLISH A MEDIA-BASED GROUP REQUEST FULFILLMENT SYSTEM
(MCGE, MPGE, MSGE, MAGE). Some media become practical delivery
systems when groups, rather than individuals, are being served.
Such media are characterized by: (a) multi-point distribution via
broadcasting or inexpensive lines; (b) inexpensive, high
data-rate reception equipment (e.g., television receivers, not
computer terminals). ITFS and cable television are examples.

It is not misleading to describe this model as a "Dear Abby"
or (better) "Dr. Hippocrates" information service. In essence the
service responds publicly to individual requests, so that clients
other than requesters can benefit from responses.

Cable television will eventually be the ideal medium for a
service of this kind. One or more channels that are set aside for
professional use by educators will be sufficient for cablecast
responses to requests. Assuming that they are subscribers to the
cable transmission system, clients will be able to participate in
this service at home during evenings and weekends.

INTERVENTION. Establish an information center within the
service area. Arrange for distribution of services via a media
system like ITFS or cable television. Two-way capability is
desirable but not essential.

INPUT. Individual requests are accepted. A large number are
fulfilled individually, according to procedures of model #10.
Requests thought to be of very general interest are designated for
public response.

PROCESS. Search knowledge base. Prepare responses
consisting of citations/abstracts, primary information, syntheses,
and answers. Aggregate responses according to professional
specialty (e.g., vocational education) and produce 30-minute
videotape in a question-and-answer format.

OUTPUT. Thirty-minute "programs" are scheduled for each of
about a dozen professional specialties, including administration,
instruction, and ancillary services. Each program is repeated as
many as three times at different evening and weekend times during
a week; then a new program begins. In format each program
resembles a television "Dear Abby" or "Dr. Hippocrates" --
individuals making requests are identified by real name or
pseudonym, and responses are addressed to them in the singular.
Other clients in the same professional specialty are "looking in"
on what appears to be one-to-one communication, although in fact
the requests are chosen for response on the basis of broad appeal.

SUBSEQUENT ACTION. All viewers are advised of simple
procedures for ordering back-up information keyed to each request.
Satisfaction data are collected by questionnaire or telephone
survey.

15.   ESTABLISH A MEDIA-BASED SCHEDULED SERVICES SYSTEM FOR
CURRENT AWARENESS (primarily MCGS).   This model combines the
editorial operations of #11 and the distribution arrangements of
#14.   If a regional ITFS or cable television system makes it
feasible, this model offers clients a low-effort professional
current awareness service in the form of 30-minute programs that
are updated weekly and repeated up to three times a week.

More so than model #14, this model invites other kinds of
packaging, such as a radio broadcast or audio cassette.   We make a
distinction between models #14 and #15 in this regard because the
more challenging content of #14 would be delivered less
effectively without video.

One prototype of MCGS service on radio, SOUNDS OF PROGRESS,
is produced for Pennsylvania businesses and industries by the
Pennsylvania Technical Assistance Program (PENNTAP) and broadcast
over 61 outlets in the state.   Five 5-minute programs are produced
each week.   Broadcasts are generally scheduled in the evening,
although some stations "batch" them into a larger time slot on
weekends.

INTERVENTION.   Establish an information center within the
service area.   Provide information specialists and editorial staff
to perform SDI functions.   Arrange for media distribution of
services.

INPUT.   Since products are not mailed to clients, it is not
necessary to collect interest data from clients for mailing-list
purposes.   However, such data are needed initially to determine
how many programs there shall be, on the basis of one program per
SDI group (see p. 26).

PROCESS.   Aggregate individual request profiles into groups.
Publicize days and times that programs serve each group.   Monitor
new literature and events in education.   Create a bibliographic
and factual file covering the immediately past week.   Assemble
various sections of the file as separate SDI programs.   (If a
medium like audio cassette is being used, shift to monthly rather
than weekly production schedule because of distribution
logistics.)

OUTPUT.   Except for a certain amount of pictorial matter to
exploit the television medium, output is the same as in #11 -- a
news and literature review service, keyed to professional
specialty.

SUBSEQUENT ACTION.   Back-up materials can be ordered.   Data
are collected on client satisfaction.

16.   ESTABLISH A MEDIA-BASED SCHEDULED SERVICES SYSTEM FOR
CONTINUING EDUCATION (primarily MSGS).   A prototype of this model

is the Medical Media Network, based at UCLA, which distributes 18 different programs each year to hundreds of subscriber hospitals, where they are viewed by physicians, nurses, and allied health staff. MMN "bicycles" 16mm and super 8mm film as well as 1 inch videotape from one subscriber location to another. Attractive workbooks, summarizing the content of each film and providing a self-test of learning. are retained by viewers.

More individual media-based continuing education is provided by a number of dial-access systems operated by Regional Medical Programs. First of these in the nation was initiated by Wisconsin Extension in 1966. At times of his own choosing, a physician can dial a toll-free number and choose any of 350 pre-recorded lectures or discussions on medical topics.

Eichhorn & Reinecke (1970) present a system description of the combined literature retrieval and continuing education service of the Vision Information Center, sponsored by NIH. In addition to literature retrieval, the VIC computer provides "instruction on various aspects of ophthalmology. At present, there are four texts of programmed instruction in the data base. The course material is supplemented by slides, which are projected on a small screen next to the computer terminal." At any time, the user may switch from instruction to literature retrieval and back again.

The restricted modality of telephone dial-access and the meager software of present CAI make these last two models unattractive relative to ITFS or cable television presentations to clients in their homes.

INTERVENTION. As in #12, establish a headquarters where client needs are monitored, priority topics are chosen, and subject matter experts are called in to assist in production. Arrange for media distribution.

INPUT. A "sensing network" helps to identify priority topics for the production queue.

PROCESS. All the process steps of #12 apply. These create a knowledge synthesis that is then scripted for media production. In order to maintain a rapid turnover of programs, simple production values and local sites are preferred.

OUTPUT. Output is keyed to budget, since continuing education programs have a high unit cost. Ideally, there would be one new 30-minute program weekly for each of five or more general professional categories (e.g., administration, instruction, counseling/psychology, instructional resources/media, and special education), each program repeated up to three times during the week.

SUBSEQUENT ACTION. Satisfaction monitoring. Fulfillment of requests for back-up materials.

17. ESTABLISH A HUMAN-BASED INDIVIDUAL REQUEST FULFILLMENT
SYSTEM (HCIE, HPIE, HSIE, HAIE). Prototypes of this model are
already operational in three states under federal auspices (see
pp. 38-52 of this report); other states and local sites have
established, or are establishing, similar programs. Conceptually,
this model derives from the work of several change theorists,
notably Lionberger (1960) and Rogers (1962). Its most detailed
projection into the field of education has been sketched by
Havelock (1967, 1969, inter al.).

Human linkage in education resembles, to a greater or lesser
extent, the agricultural extension service, pharmaceutical
detailing, technical assistance in industry, and the Peace Corps.
All of these precedent systems contribute some additional subtlety
to a model of educational extension, but none of them anticipates
the experience of a human linker in education.

An important variation of the basic human-linkage model was
proposed by Kochen (1969), whose "referential consulting network"
is founded on the premise that all knowledge originates in people
and that archives can be circumvented by a network that connects
everyone who knows with anyone who needs to know. "Sociometric"
studies have suggested that a rather small number of links
separate any two people on earth -- seldom more than three people
separate Person A and Person Z on the basis that A knows F, F
knows M, M knows W, and W knows Z. In a professional field like
education, the network is quite closed. Kochen's "referential
consulting network" can be envisioned as a small world in which
the client asks a question of a field agent or other linker, who
asks someone else, who asks someone else, etc., until the answer
is found.

Although Kochen's model suggests bonhomie and the McLuhan
global village, we must also note that it is extremely
labor-intensive. It can be faster and cheaper to search a
knowledge base than to ask someone to ask someone to ask someone,
at least for the 90 per cent of all requests that are routine.

INTERVENTION. Establish an information center within the
service area. Staff it with retrieval specialists. Deploy a
corps of field agents to link clients to the knowledge resources
of the center.

INPUT. The field agent makes himself available to clients in
person (on regular rounds) and via telephone. Clients' individual
requests are "negotiated" by him to a state of searchable clarity.
He relays requests to the information center for processing.

PROCESS. Receive request from field agent. Search knowledge
base. Retrieve information matching request. Assemble
citations/abstracts, primary literature, syntheses, and answers
into a package that will be useful to the client. Send package to
field agent.

OUTPUT. After the field agent has also screened materials in the package, what the client may receive is an eclectic selection of bibliographic information, primary literature, journal articles, syntheses like PREP, and perhaps some simple answers to factual questions.

SUBSEQUENT ACTION. This model has the greatest integral provison for follow-up of all models. The field agent can maintain contact with the client until he is satisfied that the client has no further immediate need for his services. During the period of continuing contact, he can assist the client in a variety of roles -- diagnosing the problem, obtaining information, focusing the decision, and expediting certain post-decisional steps. In the process, he can determine whether the client is satisfied with the service provided.

18. ESTABLISH A HUMAN-BASED SCHEDULED SERVICES SYSTEM FOR CONTINUING EDUCATION (primarily HSGS). It it is argued that field agents are too expensive to place at the disposal of individual clients, then economies of scale can be incorporated in the human-linkage model by interfacing the field agent with groups of clients rather than individuals. The nature of the transaction then becomes continuing education rather than request fulfillment ("group request fulfillment" would be a poor transaction for the field agent to attempt, lacking capacity of the media to reach very large audiences repeatedly).

Summer workshops have been important means of continuing education during the NDEA and post-NDEA periods. Presessions associated with annua . conferences of organizations like the American Educational Research Association are being conducted with increasing success. Use of conferencing to disseminate results of specific projects has been tried; reports by Coffey et al. (1967) and Gurin (1968) are representative. The imaginative "traveling seminar and conference" (Richland, 1965) took educators to innovative schools.

Continuing programs of the National Training Laboratories and similar organizations suggest another variation of this model, as do the inservice training programs of several states. Any year-round program achieves further economy by amortizing the high episodic costs of facilities and personnel.

INTERVENTION. Establish a continuing education center within the service area. Staff it with trainers who can diagnose the professional needs of client-groups and provide appropriate material in appropriate contexts.

INPUT. The flow of clients through the continuing education facility keeps the staff abreast of priority needs. Materials are developed around these needs and continuously adapted.

PROCESS. Arrange for groups of educators to be scheduled into brief (weekend, one week) workshops addressed to pre-designated topics. Arrange for study of background issues prior to the workshops and of specific applicatiofs after the workshops. Arrange for appropriate training leaders, printed materials, media events, tours and site visits, etc.

OUTPUT. If workshops are planned from a list of continuously updated priority topics, then they should meet the unstated needs of a large number of individual clients.

SUBSEQUENT ACTION. In a sense, the workshops are never over. "Subsequent action" is really interim action between one workshop and another. At such times the continuing education staff should be prepared to collect satisfaction and need data from clients. It would be desirable also if clients could turn to the continuing education center for specific guidance, just as physicians in the Coleman-Katz-Menzel diffusion study (1966) continued to be guided by their nearby medical schools.

RELEVANCE OF LINKAGE SYSTEM INTERVENTIONS TO THIS PROJECT. In our opinion, the nine models discussed in this section have the greatest potential for effecting both short-term and long-term change in American education. They capitalize on the availability of validated developments in the resource system and the readiness of the client system to undertake planned change. As discussed in previous sections, neither the resource system nor the client system has been "synergized" for change, but both of these systems are months or years ahead of the linkage system in this regard.

Accordingly, the interventions proposed in Section IV of this report all focus upon the linkage system.

III.   PILOT STATE DISSEMINATION PROGRAMS

To aid us in our exploration of alternative models of
educational change, in our delineation of change-oriented roles,
and in our specification of personnel functions, we conducted
site visits to the three pilot education extension projects.   In
this section we briefly describe each project and list some
project-suggested personnel selection criteria and training
requirements.   At this point in the report, readers already
familiar with the projects in Oregon, South Carolina, and Utah
are encouraged to skip to the section on site-proposed selection
criteria and training requirements (p. 54).

Some readers, unfamiliar with the projects, but seeking
in-depth knowledge, are encouraged to use two other sources of
information.   Both the Sieber evaluation reports and the
individual state reports (some of which are in ERIC) contain a
wealth of information and insight.

Other readers, unfamiliar with the three model projects, and
wanting brief descriptions of each, may continue reading this
section.   Because there are the two additional sources of
information, we have chosen to repeat facts available elsewhere
only when it is essential for clarity and continuity.

The three descriptions that follow are based on information
gathered during our site visits.   Prior to these visits we
developed an agenda that focused on previously unanswered or
partially answered questions.   These are questions we considered
to be important for our understanding of selection criteria and
training requirements of various education extension models.   A
careful examination of the Sieber reports helped clarify fruitful
areas for questioning.   Some of the reports that proved helpful
to us are: A STATISTICAL EVALUATION OF THE KANSAS CITY TRAINING
SESSIONS (Sieber, Weiss, and Hay);   FIELD AGENT ROLES IN
EDUCATION (Louis and Sieber); and PROBLEMS IN INFORMATION
RETRIEVAL (Metzger and Sieber).   The question areas we decided to
focus on are:

1.   Project Staff and Functions
2.   Project Organization
3.   Project Services
4.   Project Growth.

New Directions

RESOURCE DISSEMINATION

CENTER

Oregon Board of Education
942 Lancaster Drive, NE
Salem, Oregon 97310

RESOURCE INFORMATION
FOR QUALITY EDUCATION

This Material Was Prepared For

RETRIEVAL-DISSEMINATION PROJECT
Oregon

Oregon's Retrieval-Dissemination Project is housed in a
once-Catholic elementary school. Here the director and retrieval
staff work side-by-side with State Education Agency content
specialists, career education personnel, and Title I and Title IV
directors (to name only a few). The staff, busy even in the
summer months, strive to close the communication gap between the
production of validated information about education and the use
of such information by educators.

The project was funded in mid-1970 by USOE. At that time,
it was decided that two of Oregon's thirty-four counties would
receive the new service. The counties were similar in two ways.
Both had superintendents who were enthusiastic about the program,
and both had a record of being innovative. For instance, one had
a computer facility and the other had a closed circuit television
system.

Prior to mid-1970, the SEA had a small dissemination program
that emphasized mass distribution of SEA originated materials.
However, there was no interpersonal linkage associated with the
effort. Any other dissemination was left to individual SEA
specialists. In practice, this meant that only the more
energetic specialists got information into schools. A few
specialists put information notes in their 'columns' in the SEA
newsletter.

PROJECT STAFF   DIRECTOR. The project director devotes
AND FUNCTIONS   approximately 90 per cent of his time to
                    the education extension program. He views
his job as consisting of two major components; these are
supervising the project and increasing SEA support for the
project.

His most time consuming function is overseeing daily
operations of the project. He manages the office, allocates and
monitors the budget, supervises the staff, maintains bi-weekly
communication with the field agents, and conducts staff meetings.

His second major function is to increase SEA support so it
can continue after federal funding is withdrawn. In the early
months, the director deliberately maintained a low profile for

the project. His strategy was that of proving the project in a few areas so that education successes and improvements facilitated by the field agents could speak for themselves. More recently, the director has worked closely with others in the SEA to get a firm budget line for the program.

RETRIEVAL STAFF. Two full-time retrieval specialists, a part-time library assistant, and a secretary are the retrieval staff. Help from the library assistant was gained when the Retrieval-Dissemination Center moved into the SEA Professional Resource Library in mid-1971. Prior to that time, a staff of three managed a small reference collection and fulfilled all information requests.

RETRIEVAL SPECIALISTS. The first retrieval specialist whose position is slightly senior, screens all requests and assigns request fulfillment responsibility. Both RSs call the field agent if clarification is needed, complete official request forms, determine how requests will be fulfilled, specify appropriate descriptors and develop logic when computer searches are to be done, locate needed resource materials when locally owned books or journals seem useful, contact SEA specialists when human resources are requested or seem valuable, screen incoming pre-packaged materials and results of computer searches, add supplementary materials, and maintain and build the resource library collection including the addition of new books and materials for the pamphlet file.

The retrieval specialists, aware that the results of a computer search are determined by the logic writing, have implemented a set of procedures for sharpening this skill. The RSs identify and clarify key elements of the request, tentatively select appropriate descriptors, evaluate character of descriptors using RIE and CIJE references, list frequency county, organize logic, indicate the use of the update and/or history file, and transfer final logic to OTIS Request Form. In addition, the computer program is set to cancel the search if it yields more than 125 documents. In rewriting these requests, the staff learn to use logic more tightly. This seems to have two effects. First, the client receives a better focused set of abstracts. And second, the staff does not have to be spend as much time screening the results of a search.

Although the retrieval specialists spend most of their time in the SEA, they occasionally visit model innovative programs and visit schools with the field agents. These two activities keep them in touch with what is happening in the state that others may want to know about and with the needs and interests of clients. In particular, visiting clients with the field agents provides a ring of continuity around what a client requests, the written request, and the final information product.

LIBRARY ASSISTANT. The library assistant officially serves the project by assuming responsibility for loaning materials from the professional resource library. The retrieval specialists

often call on the LA to contribute his personal knowledge of resources that might help fulfill an information request.

SECRETARY. The secretary logs all requests when they arrive, takes phone requests, assigns number codes, files request records by client's name and topic, completes order forms for pre-packaged materials, receives these information packets, matches packet with request code number, returns packet to retrieval specialist for relevance screening, fulfills microfiche orders, xeroxes materials, packages completed requests and adds client evaluation form with return envelope, completes final logging of request, mails information products, and orders books, journals, and other printed matter for the Reference Center collection.

FIELD AGENTS. Oregon has two full-time field agents. One has just been hired to replace an agent, while the other has been with the project since it started. They will soon be performing similar functions; however, there is always a difference between start-up and stable-state activities.

The first field agents were responsible for initial promotion of the service, for getting educators acquainted with the new role, for setting up their offices, and for helping educators specify their information needs. The new field agent joining an established project continues to sell the service, but must emphasize getting acquainted with and accepted by his region's educators.

Both the first agents and the newest agent use comparable start-up strategies. These include using press announcements, visiting district superintendents, determining protocols for making building-level contacts, and making presentations at Intermediate Education District (IED) office meetings and faculty meetings. One agent used a videotape detailing the service as a way of increasing knowledge and interest.

Once the field agents generate enough interest in the program that there are individual requests, the job centers on: discussing problems with clients, helping clients focus on specific problems, sending requests for information to the Resource Center, receiving and reading through request fulfillment packets, delivering information to clients, assisting in the decision-making and implementing phases, managing an office, and writing weekly activity reports.

The agents emphasize the multiplicity of roles they assume. Sometimes they are delivers of information, sometimes facilitators, sometimes change agents. Different roles seem appropriate for different clients. For instance, a researcher in the Eugene school system wants information, but does not need interpretation. For this client, the field agent is a deliverer. A teacher interested in team teaching wants to talk with someone who is involved in team teaching. The field agent makes an appointment with a teacher in another district who started team

teaching two years ago. For the client, the field agent is a facilitator. A teacher dissatisfied with the third grade social studies program requests information. The agent discusses the need, expands the meeting to include teachers from all grades and the principal, helps the committee focus on objectives, presents alternative social study plans, and is actively involved in the adoption of a new school-wide social studies curriculum. For the client, the field agent is a change-agent. In all cases, the role of the agent is determined by the client's needs.

PROJECT   STATE EDUCATION AGENCY. The retrieval
ORGANIZATION   staff report to the project director. The
                 project director, serving also as the
Director of Instructional Technology, reports to the Associate
Superintendent of Instructional Services. The Associate
Superintendent reports to the Deputy Superintendent who reports
to the Superintendent of Public Instruction.

FIELD. The two field agents are housed in IED offices. One is in Lane County and the other is in Umatilla County. As regular members of the IED office, the agents report to the head of that unit. However, they also report to the project director. Dual reporting is the result of a policy that field agents are to be perceived as county, rather than state, personnel. The two counties get grants from the SEA to pay agents' salaries.

Prior to the start of this project, Lane County had developed a computer facility to service county schools. OTIS (Oregon Total Information Service) was the reasonable answer to the project's question of "Where do we go for computer searches?" CIJE and RIE tapes were purchased and a computer system for searching these tapes (QUERY) was installed.

SERVICE   Individual request fulfillment is the primary
              service provided by Oregon's model dissemination
project. Only occasionally are there attempts to provide current
awareness materials for clients, and never on a continuing basis.

Eighty-five per cent of all requests are fulfilled by a computer search. Sometimes manual searches through materials at the resource center supplement or replace a computer search. Another way of supplementing CIJE and RIE abstracts is use of SEA specialists or outside consultants (from the University). Other strategies for fulfilling requests are BOCES searches, microfiche or paper copy from fiche, PREP Reports, IOX Objectives, and State Library journals. Only a small percentage of the results of computer searches are saved. The decision to save a copy seem to be based on the potential general interest of the topic or the quality of the documents.

Requests continue to come from a broad range of clients. Included are members of the Oregon School Board, SEA personnel, superintendents, assistant superintendents, curriculum personnel,

principals, teachers, and counselors. Recently, this service has been made available to students attending a leadership conference.

PLAN OF   Oregon is working toward the establishment of a
GROWTH   statewide information network. Early last
              spring the director sent a letter to all IEDs
soliciting their help in extending the project's coverage area.
Each IED was invited to send a professional to a three day
workshop on field agentry. Knowing the best place to start was
with those most eager to have the service, the director did not
attempt to bring in the whole state at that time. Two IEDs sent
two professionals to the training session. Nine IEDs sent one
professional. Of those who attended one third participate
vigorously, one third send in half a dozen requests per month,
and one third are inactive. A follow-up session for these agents
was held in late August. The director feels additional training
will generate new enthusiasm as well as better service.

The director and staff are beginning to solicit the interest
of non-participating counties. The director estimates twelve new
IEDs will join the project. This would mean that 25 of the 34
counties would have part-time f:... agents. These new
county-paid agents are being er .uraged to take over most of the
work presently done by the two state-paid agents, thereby
enabling the experienced agents time to coordinate and assist the
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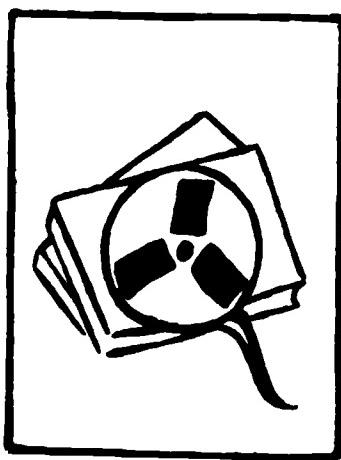
Research

Information

Unit

"A program to close the gap between educational research and practice in our schools..."

P.L. 90-576
Title III

South Carolina State Department of Education

INFORMATION DISSEMINATION PROGRAM
South Carolina

South Carolina's State Department of Education has long
promoted the notion of dissemination of information from the SEA
to the LEAs. However, the program always functioned on an ad hoc
basis until the present Pilot Program for Information
Dissemination was funded by USOE in mid-1970. Today, one wing of
the sixth floor of the State Department of Education's building
in downtown Columbia is a beehive of information retrieval and
dissemination activities. Project management offices, retrieval
staff offices, and computer facilities are conveniently located
adjacent to each other. The State Library and University of
South Carolina, both within a block of the SEA, provide
additional human and print resources to the project.

Although the project plans to make the service available to
the entire state in the near future, it started by providing
in-depth assistance to two districts. Each of these districts is
served by a Communication Specialist who lives in the district
and helps district educators, but who also works closely with the
retrieval staff in Columbia. After the two target districts had
been named, all other district superintendents were invited to
name district representatives (DRs) who would receive enough
training that they could submit information requests for their
district educators to the Research Information Section.

PROJECT STAFF   South Carolina's staffing pattern is the
AND FUNCTIONS   most unique of the three model projects.
                    The staff is larger and functions are more
clearly differentiated.

PROJECT DIRECTOR. The director spends about 20 per cent of
his time on this project. He feels hiring project personnel,
setting project policy, and working to obtain full state funding
are the appropriate functions for a director. In determining the
thrust of the project, he makes sure it stays in line with state
objectives. This makes it easier to integrate the project into a
state financed program. One way the director has gained
acceptance of the project is by encouraging the Deputy
superintendent, the State Superintendent, and even the governor
to use the Research Information Unit (RIU) when they have
information needs. As a result, several in-depth papers have

been prepared for those who help determine the future funding pattern of the project.

CHIEF SUPERVISOR. Where the project director's functions end, the chief supervisor's begin. These include supervising the staff on a day-to-day basis, making sure retrieval is done efficiently and effectively, maintaining communication with the two field agents (CSs), conducting staff meetings, writing reports, and developing and updating forms.

INFORMATION ANALYST. Actual retrieval of information is handled by the retrieval staff. A recent reorganization of functions has given the Information Analyst (IA) two major tasks. Primarily, the IA is the linker between the 64 district representatives and the Research Utilization Center. However, the IA also handles all information requests that are marked as urgent. She uses all resources at hand to fulfill the request within a 3-4 day period.

INFORMATION PROCESSOR. The IP is the human resources specialist. All requests that can best be fulfilled by a consultant are handled by the IP. She develops a file of specialists within the SEA who are willing to provide additional assistance for clients and consultants from various institutions of higher education who have indicated an interest in working with clients on special problems. She acquaints herself with as many potential consultants as possible and then is the person who contacts them when their help is needed. The IP also researches and writes in-depth papers and compiles state-of-the-art packets on topics that seem to have general interest (such as behavior modification workshops and individualized instruction).

INFORMATION TECHNICIAN. There are two ITs on the project staff. One IT fulfills ll requests that require computer searches. She writes the logic, submits the coded requests for computer processing, screens the abstracts that come back from the completed search for relevance, and highlights pertinent information in the computer printout. The second IT is responsible for all requests that can be fulfilled with pre-packaged materials such as PREP kits.

MATERIALS ANALYST. The MA has two functions. First, she receives all logged-in requests, reading each, and deciding what kind of search will best fulfill the request. She then routes the request to one of the four staff specializing in: human resources, computer-based information, pre-packaged materials, or urgent searches. She chooses the one type of search that cprobably best answer the information need. However, single request might be the subject of several types of searches. For instance, the MA might give a request on a new reading program to the IP so the SEA reading specialist could be called in for guidance. However, the IP may feel there are also valuable materials in ERIC. She would then ask the IT to do a computer search while she arranges an appointment with the specialist. In this case, the IP would screen ERIC abstracts for relevance.

Second, the Materials Analyst is responsible for evaluating the 'fugitive' literature that comes to the RIU directly from the source or via the SEA. All relevant materials are added to the vertical file. She also keeps records on all education journals (who has them, whether they can be borrowed, xeroxed, etc.).

CLERK-STENO. The Clerk-Steno receives all mail requests from the secretary. She logs the requests and assigns code numbers. During the time the request is in-house, she keeps a current record of its status. She is also responsible for the card file of all responses to requests, cataloged by topic.

HOURLY CLERK. One part-time clerical assistant xeroxes and checks out needed books/journals from the state library. She is presently microfilming the copy of all search products for Recordak retrieval. The utilization of duplicate searches, as shown in the following chart of request processing, attests to the value of maintaining a search-product file:

	Jan	Feb	Mar	Apr	May	June	July
Original Searches	70	199	164	122	63	118	67
Duplicates	0	0	84	83	67	73	0
PREP	208	56	79	214	70	1	13

A catalog of all requests processed since July, 1970, is sent to communication specialists, SEA personnel, and the more active DRs. In practice, this list of duplicate previous searches becomes a resource of pre-packaged materials that clients can order.

COMMUNICATION SPECIALISTS. South Carolina's two field agents are called Communication Specialists (CS). The CS's broadly defined functions are:

1. To aid district educators in the identification of educational information needs;

2. To prepare and submit information requests to the RIU;

3. To organize and highlight information in the completed information packet;

4. To get the information back to educators;

5. To help interpret and utilize the research information.

Since the two CSs work in very different parts of the state (a northern, rural district with 13,000 pupils and a southern, urban district with 60,000 pupils), it is not surprising each developed a unique way of presenting the service to the district during the start-up period and of serving individual educators

now. However, it is the communality of their functions that is
being emphasized here. The comments that follow are based on
statements made by both agents.

In the initial months of the project, the CSs developed new
contacts in their districts. Both had worked in their districts
before, but their roles had been different. To gain acceptance
of the service, the CSs worked with district level
decisionmakers, principals, and faculties. Slide presentations,
personal letters, and explanatory booklets were initially used as
ways of conveying information about the project. Once requests
started, CSs usually followed this sequence:

1. Take phone request and set up appointment
    with client;

2. Meet with client to discuss problem and
    formulate a specific request for information;

3. Complete RIU request form giving description
    of need, purpose of request, and date information
    is desired;

4. Send request to the RIU and provide additional
    information about the request, if needed;

5. Look over information product sent by the RIU
    and reorganize material, when necessary;

6. Deliver information to client and explain
    contents of packet and possible future steps
    including ordering microfiche
    of documents abstracted in the packet;

7. Facilitate ordering of fiche and take fiche and
    fiche reader to client, when requested;

8. Retrieve more information, if needed,
    or help client clarify alternative
    solutions to the problem;

9. Help client assume responsibility
    for implementation of solution.

These nine steps center on the important client-oriented
functions of the field agent. However, the agent is also
responsible for managing his office.

PROJECT   STATE EDUCATION AGENCY. The retrieval
ORGANIZATION   staff report to the chief supervisor, who
                   reports to the project director. The
project director, as Director of the Office of Research, reports
to the Deputy Superintendent. The Deputy reports to the State

Superintendent of Education. This organizational structure places the project director two reporting steps away from the State Superintendent.

FIELD. The two communication specialists are members of the State Department of Education staff. Each has an office in his respective district. Each is responsible to both the administrative chief of the district and the chief supervisor of the RIU.

SERVICE   Individual request fulfillment is the primary
             service offered. However, selective
dissemination of pre-packaged information is now being considered. The retrieval staff emphasizes that these packets will not replace the individually negotiated requests that are tailored to the client's particular needs. Instead packets on topics of importance to a large number of educators in a district will be developed and distributed. For instance, a packet on drug abuse is being researched. When completed, it will be sent to a planning committee that is working to establish a drug information program for students.

One of the communication specialists tried placing journal articles (plus a request form for additional information) of timely interest in the mail boxes of 26 principals. The service was terminated when it failed to generate more than a few requests for more information. However, in the future, this activity might prove to be a valuable current awareness service that regularly delivers information to educators to keep them up with recent developments in education.

Requests are fulfilled at the RIU by a computer search (of ERIC and CIJE tapes), a manual search of local materials, a call to enlist the services of a consultant, a PREP report, or some combination of these resources. Since both communication specialists have access to printed materials and some consultants in their district, some requests are fulfilled without the assistance of the RIU.

The RIU serves educators at all levels. This includes some educators-to-be. For a fixed fee of $15, the RIU will do a computer search for education students at the University. These requests come from the college or university library to the State Library and then to the RIU. Students are encouraged to provide their own descriptors. The staff, in this case, does not screen abstracts. The entire search printout is returned to the student.

PLAN OF   Like the other two pilot projects, South
GROWTH   Carolina is working toward a network of part-
             time or full-time state-funded agents. One
district has hired a full-time Communication Specialist, the two

target districts have chosen to fund the CS's position at their own expense, and almost a dozen other districts are commiting part of a professional to serve as a communication specialist. One of the original project-funded communication specialists will become an area CS and will direct the activities of the new district CSs for the southern half of the state. The other CS is unable to move to Columbia to assume responsibility of area CS for the northern half of the state, so a new area CS will be appointed. Since the position requires knowledge and expertise in the program, someone already on the staff will be promoted to this new job.

All new communications specialists will have a minimum of one day of training by the staff in Columbia. The area specialists will continue to offer assistance and suggest additional training.

The chief supervisor has been working with the library science school, South Carolina University, to find ways of involving students in the information dissemination project. One suggestion now being considered is the establishment of an intern program in which library science students would work as apprentice retrieval specialists.

RESEARCH INFORMATION FOR THE EDUCATOR TO MEET THE EDUCATIONAL NEEDS OF UTAH'S CHILDREN

Technical Assistance Information Service

Utah State Board of Education
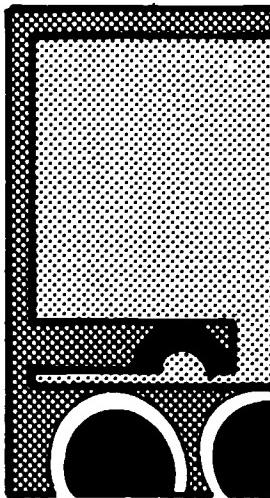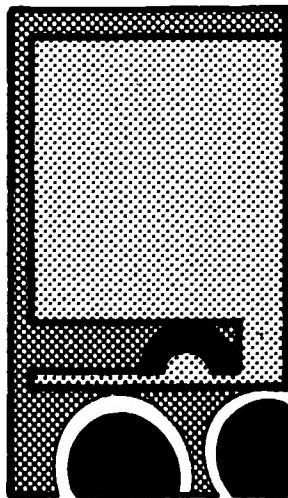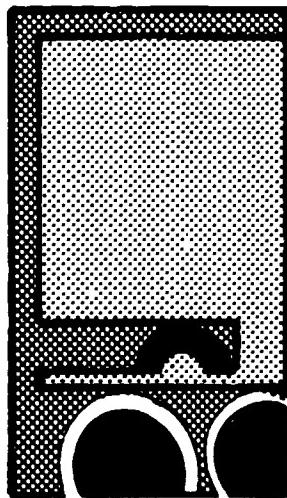
Salt Lake City, Utah 84111
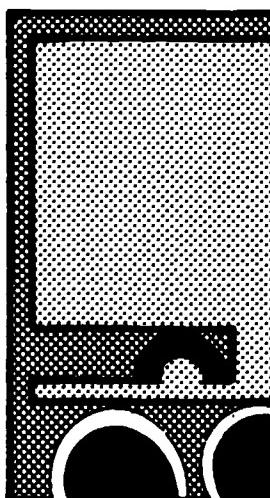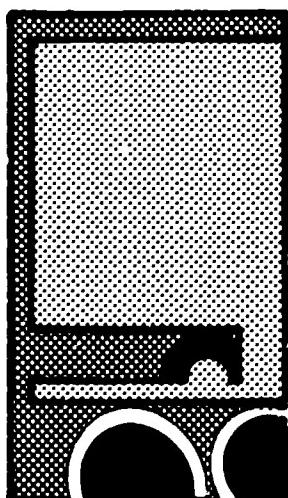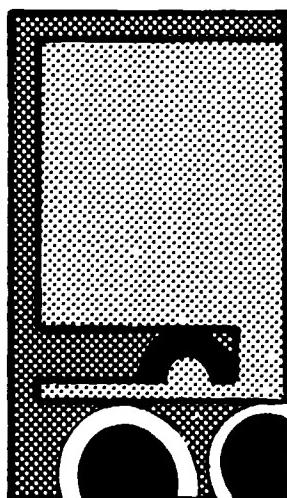
1400 University Club Building
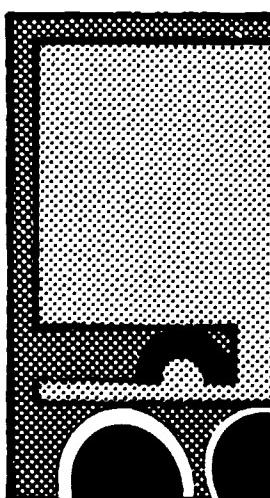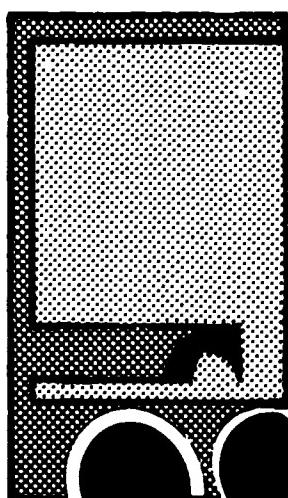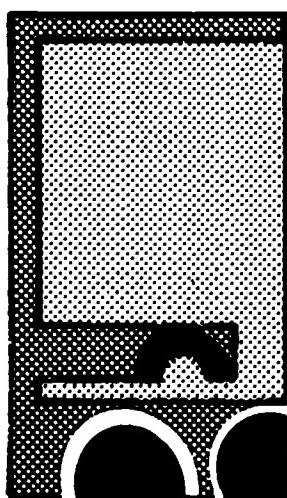
TECHNICAL ASSISTANCE INFORMATION SERVICE
Utah

Offices of the Technical Assistance Information Service (TAIS), as the Utah education extension project is called, overlooks Salt Lake City and the surrounding countryside from the 14th floor of the University Club Building. The Utah State Board of Education occupies five floors in this building. That places TAIS in the midst of a wealth of human and print resources.

Utah's project has developed somewhat differently from the other two states' projects. Early emphasis was on the interpersonal linkage system rather than a retrieval system at the state level. The staffing pattern clearly reflects this situation. There are four field agents and one retrieval specialist. With a statewide field agent network approaching reality, the retrieval specialist is busy acquiring and implementing a computer system.

PROJECT STAFF AND FUNCTIONS   PROJECT DIRECTOR.   The project director spends a maximum of a third of his time on this program. Since the staff is small and the reference center manager is quite able, the director does not devote much of his energy to daily staff supervision. He represents the Technical Assistance Project on the Planning Council, the Administrative Council, and the Executive Committee. He explains TAIS to other SEA personnel, coordinates TAIS with other federal programs, assists in the training of new field agents, manages the budget, holds monthly staff meetings, helps with project reports, and writes proposals.

The director emphasizes the importance of having the project represented on various SEA councils and committees. The 20 per cent of his time spent working with these groups helps the project in two ways. First it has brought the new service to the attention of these SEA officials. Evidence of the interest and enthusiasm that has been generated for this project, is the support given it by the State Superintendent. He made a policy statement that all SEA specialists are to give the project up to 10 per cent of their time. And second, the director feels having the project represented on these councils will facilitate getting state funding for TAIS when federal funding is no longer available.

REFERENCE CENTER MANAGER. Although the Utah project plans to have local computer search capability in the near future, all individualized computer searches have been conducted by BOCES (Northern Colorado Board of Cooperative Educational Services). BOCES also supplies the project with many pre-packaged products. Extensive use of BOCES has meant the RCM job has developed somewhat differently in Utah than in the other two states. The RCM is the only retrieval specialist in the state. However, since most retrieval is done in Boulder, the RCM has taken over most of the daily management of the project.

When the project started the RCM was responsible for developing an information retrieval center (including decisions on books, journals, and resource materials to be ordered), for setting policies on retrieval issues, and for establishing procedures for information retrieval.

Once the reference center was operational, the tasks of the RCM focused on reviewing all requests; sending requests to Boulder on BOCES information retrieval forms; screening the returned information products; searching local resources to supplement BOCES products; supervising the circulation of microfiche, the logging of requests, and the mailing of final information products; working closely with the field agents; receiving and supplying information to SEA personnel; receiving and supplying information to USAIL (Utah's individualized curriculum writing project); ordering new materials and resources for the reference center; writing monthly and quarterly progress reports; and assisting with monthly staff meetings.

SECRETARY. The secretary serves both the project director and the reference center manager. Her job includes: recording and logging all incoming information requests, recording and logging all incoming information packets, packaging and mailing all completed searches to field agents (or in some cases to clients), pulling all requested microfiche, recording circulation of fiche, recording distribution of PREP and NCEC materials, typing correspondence, xeroxing, recording project statistics, and occasionally taking requests over the phone.

FIELD AGENTS. As in the other two states, the field agents in Utah feel there are two different kinds of activities they have performed. Early in the project, they were busy meeting with superintendents and principals, obtaining permission to work in the schools, distributing flyers about the new service, setting up office procedures, and supervising the secretary's activities. Now that many educators know about the service, the agents spend their time: taking phone requests, meeting with clients, negotiating information needs, writing and sending requests to the RCM, searching local resources (both print and people), scanning returned information products, delivering materials to clients, discussing these materials with clients, following up to help clients work through problems, loaning fiche and fiche readers, managing the office, and traveling (large

distances between district schools in Utah means an agent often spends two hours per day on the road).

Agents in Utah seem to do more 'local' retrieving than agents in other states. The pattern may change once the reference center in Utah has computer search capabilities. In the meantime, the agents are quite likely to fulfill a request from their own supply of PEP kits, PREP kits, or by xeroxing abstracts from RIE or CIJE. One agent carries multiple copies of pre-packaged resource materials in the trunk of his car. He finds many general requests can be answered "from the trunk". In many cases this material helps the educator focus his concern. The field agent then revisits the client, who now can better discuss his problem, and helps him specify the information need. The request is fulfilled with additional materials available at the regional center office, with human and/or print resources available from the Salt Lake City retrieval center, or with a computer search by BOCES.

PROJECT   STATE EDUCATION AGENCY. The reference
ORGANIZATION   center manager reports to the project
                director. The project director, who is
also the State Coordinator for Title III, reports to the Deputy Superintendent of the Office of Instruction Services. The Deputy Superintendent reports to the State Superintendent of Public Instruction.

FIELD. In Utah all money for education is collected on a state, rather than local, basis. Each district is entitled to a certain number of personnel credits (district units or DUs) determined by pupil enrollment figures. Superintendents often combine DUs to get specialists and some expensive materials. To facilitate the sharing of these resources, the specialists and equipment become part of a regional center. Each center serves several districts.

When TAIS was funded, the director decided the field agents would operate from these regional centers. There are now three project-funded field agents, and a fourth agent who is funded by a regional center. Two of the field agents are specialists in their centers. They report to the regional center's directors and to the project director. The other two field agents are directors of their regional centers. They report to the project director. One of these directors found it difficult to be both regional center director and active field agent. To solve the dilemma, he hired an assistant director. Now each are half field agent and half director. One specializes in elementary school educators and the other in secondary school educators.

The field agents seem to maintain a fairly delicate balance between regional orientation and state orientation. All four centers are completely autonomous. For instance, all fiscal decisions reside with the RC. This autonomy is viewed favorably

by TAIS since it does not want to operate as a state imposed project. However, the field agent represents the SEA's position on certain programs and curricula.

SERVICES   Individual request fulfillment is the one
              statewide service provided. However, one of
the field agents often takes xeroxed materials 'in a box' and leaves them in a school faculty lounge. This unsolicited distribution of general interest information is a kind of non-institutionalized current awareness service.

Requests can be fulfilled in several ways. TAIS uses the pre-packaged materials from Boulder to fulfill many information needs. PET (Packet of Educational Topics), CAT (Catalog of Computerized Searches), and CAP (Current Awareness Profiles) are all available with one week turn around time. Of these three, CAP has the potential for being a continuing current awareness service. It is a quarterly review of the most recent ERIC reports in abstract form. Subscribers receive updated profiles (on any of 30 topics) four times a year. However, TAIS presently is using the profiles to fulfill specific requests. The client does not continue receiving currently issued profiles.

Other packaged or locally available materials that are used to fulfill requests are PREP (Putting Research into Educational Practice), microfiche, and summaries of materials and programs from the regional labs.

SID (Search in Depth) is the Boulder service for individualized computer searches. A SID takes two to three weeks. Other individualized searches include use of SEA specialists and print materials available in the resource center.

All services are used by a wide range of educators. Requests come from superintendents, principals, teachers, specialists, and coordinating directors.

PLAN OF   Expansion of Utah's TAIS will involve two
GROWTH   types of activities. First, 25 rural districts
              are in the process of appointing field agents.
These new agents, most of whom will devote only a portion of their professional time to the dissemination project, will go through training. The full-time agents will become trainers and coordinators. Less of their time will be spent working with clients. Instead, they will help the 25 new agents to develop their skills.

The second aspect of the expansion deals with information resources. Regional centers will begin developing their own print and human resources. Agents will be encouraged to rely on their own materials when possible. In-depth computer searches will continue to be coordinated by the reference center manager.

SITE-PROPOSED SELECTION CRITERIA AND TRAINING REQUIREMENTS

During our site visits, we observed how the projects operated, how the staff functioned, what kinds of services were provided, and how expansion would effect the project. Our conversations with the three staffs had two additional objectives. We asked what selection criteria they felt should be used in choosing new project directors, retrieval specialists, and field agents for the next wave of federally funded education extension projects. We also asked what training requirements there should be for these new project personnel.

Without exception, the answers we got from the staff indicated a great deal of prior thought and consideration of these issues. Certain comments like "previous experience in state agency" (project director) or "strong self-concept" (field agent) were heard many times. Other comments like "be a self-starter" (field agent) or "have good interpersonal skills" (retrieval specialist) were only mentioned once. However, it is by pulling together all suggestions that we have a fairly comprehensive set of selection criteria and training requirements.

We organized these site-generated responses by role. Then within each role, we grouped together the selection criteria and the training requirements. Within selection criteria we made distinctions between comments that pertained to:

1. Personality, attitude, and professionalism

and comments that pertained to:

2. Education, experience, knowledge, and skill.

Within training requirements we differentiated between content-related and format-related comments.

SELECTION CRITERIA

1. Personality, Attitude, Professionalism

    Project director should:

        - have a strong self-concept
        - be able to handle new ideas
        - be charismatic (if start-up director)
        - be a manager (if steady-state director)
        - be able to make decisions
        - consider the project worthwhile
        - believe the project should eventually be state funded
        - be flexible (in pushing own ideas, in method of
          operating, etc.)

2. Education, Experience, Knowledge, Skill

    Project director should:

        - have good interpersonal skills
        - have administrative skills
        - have had experience in state agency
        - be able to put project into mainstream of SEA
          activities
        - be aware of state objective and goals
        - be able to set policy that keeps project in tune with
          state goals
        - be able to sell a concept, make others believe in
          project

TRAINING REQUIREMENTS

1. Content

    Project director needs OVERVIEW OF:

        - the relationship between information dissemination
          and the change process in education
        - project -- what it is all about and where it is going
        - roles -- what retrieval staff will do
                -- what field agents will do
        - what is being done in educational research (e.g. what
          regional labs are doing)

Project director needs to know HOW TO:

- sell the project (will know the project if has some
  "hands on" experience)
- keep the group morale high
- work with computer consultants (if going to have in-
  house computer capability)
- work with budgets
- conduct own evaluation

2. Training Format

Project director can profit from:

- lectures
- experience (with computer searches)
- simulations (of field agent-client negotiation)
- visit on-going project

SELECTION CRITERIA

1. Personality, Attitude, Professionalism

Retrieval specialist should:

- be a facilitator
- be responsive to others
- be flexible
- be open to new ideas, new ways of finding
  information, new ways of packaging
  information
- be willing to visit model programs and projects
- be willing to visit clients with agents

2. Education, Experience, Knowledge, Skill

Retrieval specialist should:

- have a BA if retrieving print or human resources
- have a MA if synthesizing research or supervising
  staff
- have interest, knowledge, and background in education
- understand the retrieval field (although specific
  retrieval skills can be taught)
- be able to sell the service
- have good interpersonal skills
- know state resources (materials and people)

TRAINING REQUIREMENTS

1. Content

    Retrieval specialist needs OVERVIEW OF:

    - relationship between information dissemination
      and the change process in education
    - scope of services of project
    - field agent's job
    - retrieval staff's job (including implications
      of working within SEA's bureaucracy)
    - ERIC, regional labs, education research

    Retrieval specialist needs to know HOW TO:

    - use ERIC (including abstracts, abstracting
      irregulariries, acquisition irregularities)
    - write logic
    - work with computer (including computer consultants)
    - seek out and use new resources
    - use forms (know which forms to use)
    - keep files (know what kinds of files to keep)
    - attractively package materials
    - use microforms and microform equipment (microfiche
      readers, reader/printers, fiche-to-fiche reproducers,
      microfilmers, etc.)
    - negotiate phone requests

2. Training Format

    Retrieval specialist can profit from:

    - lectures
    - experience writing logic, completing forms, etc.
    - visit to established project site

SELECTION CRITERIA

1. Personality, Attitude, Professionalism

    Field agent should:

    - have a strong self-concept
    - have a high energy level

- relate well to people
- be empathetic
- be a self-starter
- be able to maintain confidences
- be willing to perform a job that has little
  glory and few rewards
- be flexible in ways of thinking about problems
- have service attitude
- have non-threatening attitude
- be part public relations man and part salesman
- be willing to tolerate loneliness
- be strong, but not overbearing
- have a positive attitude about value of research
- be supportive
- be conscientious

2. Education, Experience, Knowledge, Skills

Field agent should:

- have good listening skills
- have good interviewing skills
- have good techniques in group processes
- be an ex-teacher and/or ex-administrator
- know county educators
- be knowledgable about county schools, school systems,
  and classroom problems
- be able to make people believe in program
- have at least a BA

TRAINING REQUIREMENTS

1. Content

Field agent needs OVERVIEW OF:

- history of education information dissemination
  efforts
- change in education, highlighting use of validated
  materials
- research in education (e.g. regional labs)
- scope of this project
- role of retrieval staff
- role of field agent (how he extends the dissemination
  outreach efforts)

- national perspective on new developments (alert
  agents to need to learn the state view on where
  education is going, what changes the state is likely
  to support)

Field agent needs to know HOW TO:

(managerial skills)
- set up office
- run office
- keep budget
- keep meaningful files

(retrieval skills)
- use ERIC
- use thesaurus
- make out retrieval forms
- retrieve documents

(agentry skills)
- gain entre at different school personnel
  levels
- explain research to others
- sell (be persuasive), but not oversell
- strategies for relating to educators at different
  personnel levels
- strategies for terminating FA/client relationship
- arrange workshops to bring together SEA specialists
  and school personnel
- make client confident
- present service to the area (presentations,
  videotape, etc.)
- transform documents (transformation process)
- implement programs
- repackage materials from retrieval staff
- diagnose problems
- ask questions (the art of asking questions)
- know what to do when someone asks you to find
  information on 'how to fire a superintendent'
· - negotiate
- set up territory (what time of day to go out,
  what to do, what to say, who to say it to, etc.)
- handle early requests
- strategies for surviving the first year:
        don't say you are panacea for all
        problems
        don't overcommit self to any single
        idea or innovation
        always get self out of problem so if
        material fails, you don't
        watch out for power structure, (try
        to use it to your advantage)

2. Training Format

Field agent can profit from:

- lectures
- simulations
- videotape to show:
    what other FAs have done
    how they set it up
    some of their experiences
    examples of rapport building
    examples of what worked
    examples of what didn't work
    how to get into a building
- workshops with 3 people to work on
  negotiation skills (one field agent,
  one client, and one observer)
- experience with a computer search
- work in field with experienced FA

IV. RECOMMENDED MODELS

Productive synergy in the resource system and the client
system will ultimately require most of the 18 interventions
discussed in Section II. However, recalling the distinction made
on page 19 between first-phase and later interventions, we
recommend a sequence of initiatives (federal, state, etc.) that
will achieve the following:

1. First, establishment of full linkage between the
   resource system and the client system. This will
   probably ru re, in each state or region, several
   related linkage-system interventions.

2. Then, since the backlog of validated R&D exceeds
   the client system's capacity for immediate
   implementation, we next recommend interventions
   in the client system rather than the resource
   system. Sometimes using direct initiative,
   sometimes using concept papers (like the
   effective early Burchinal and Clemens papers
   on dissemination and articulation) combined
   with seed money grants, a sponsor should seek
   adequate field trials for interventions in the
   set #4 through #9.

3. Finally, the slow, frustrating task of improving
   the relevance and quality of educational R&D
   should receive greatest attention. Using its
   considerable prerogative in this area, the National
   Institute of Education should seek adequate field
   trials for interventions in the set #1 through #3.

Therefore, the five interventions we recommend in this report
all focus on the linkage system. The first three models emphasize
individual fulfillment of knowledge requirements:

MODEL 1.   A central reference facility fulfills individual
            requests received from clients by mail and by
            "hotline" telephone. Clients deal only with
            reference staff. There is no field staff.
            Availability of services is publicized by brochures,
            bulletin board announcements, etc. A supply of
            request forms is available in every school and
            district office. Clients receive response (an
            information package) by mail.

MODEL 2.   Basically the same configuration as #1, but with
            some field liaison. State education agency
            consultants and their counterparts in larger
            districts attend training sessions that familiarize
            them with the service. In their field contacts,
            they publicize the service, clarify its scope,
            and accept information requests from clients.
            Most clients, after being apprised of the service
            by consultants, use normal mail and hotline request
            channels. Except when a consultant asks to
            communicate the response back to the client
            himself, the reference facility fulfills requests
            by mail.

MODEL 3.   The central reference facility has little client
            contact. Instead, a staff of field agents receives
            requests, forwards them to the reference facility,
            receives packaged responses back from the facility,   .
            conveys responses to clients, and follows up later
            to determine adequacy of the information.

            3A. Each field agent is responsible for several
            hundred educators across many schools and possibly
            more than one district.

            3B. Each field agent coordinates a team of part-time
            agents (educators in schools and district offices).
            The full-time field agent has little client contact
            but monitors the flow of requests and responses. In
            important or delicate situations, the full-time agent
            meets with clients personally.

            3C. In a test of "saturation service," the field
            agent is available full-time to no more than one
            hundred educators in a few schools. Painstaking
            request fulfillment and thorough follow-ups
            distinguish this model from 3A.

In each of the above models, requests are processed individually
and responses are packaged individually. The reference facility
does not prepare many syntheses, reviews, state-of-the-art papers,
or bibliographies. Appropriate titles from PREP, PET, etc., are
included in individual packages but are not distributed on a
mailing-list basis.

The final two models emphasize group fulfillment of knowledge
requirements, to achieve economies of scale:

MODEL 4.   The central facility combines reference and publication
            capability. Current needs of clients are monitored
            through SEA and LEA sources and by field surveys.
            There is no field staff to receive requests nor to
            convey responses back to clients. Instead, the
            reference facility deals with high-frequency and high-
            priority needs by publishing targeted information
            briefs. These briefs, more succinct than PREP or PET,
            are in looseleaf format. Targeting is clearly
            indicated on each brief (e.g., "FOR: Elementary
            Reading Teachers"). In terms of response specificity,
            the information briefs are not as specific to clients'
            needs as the individual responses of the first three
            models. However, they are closer to the local needs
            than either PREP or PET. Each brief begins with the
            statement of a problem or question, presents an
            overview of possible answers or alternatives, and
            concludes with action steps for securing additional
            information from the reference facility. Additional
            information, supplied upon request, is largely PREP,
            PET, and similar material. Whenever possible, each
            brief occupies no more than a single sheet of paper,
            so that the state agency can publish several thousand
            copies for distribution to district offices and
            schools.

MODEL 5.   The central facility monitors high-frequency and high-
            priority needs as in #4, but group response takes the
            form of audiovisual media packages and "happenings."
            When a topic has been chosen for group response, the
            reference staff prepares the "message" while a media
            specialist arranges for the proper "medium." In each
            case the proper medium depends upon the target audience
            and the local media environment. In states that have
            excellent communication networks for education (e.g.,
            New York), it is proper to designate certain days and
            hours for a "Problem Roundtable" program on radio,
            public broadcast television, cable television, ITFS,
            etc. Two-way "talkback" networks are used to conduct
            statewide mini-workshops. Some of these become
            face-to-face workshops at the local level. In other
            cases the real-time communication network is not
            adequate, and the media specialist chooses to produce
            an audio cassette, a videotape or video cartridge, a
            brief film or filmstrip, etc., for targeted
            distribution to district offices and schools. National
            audiovisual resources, coordinated by NICEM and the

National Audiovisual Center, are used whenever
appropriate to supplement state-level production.
Like print packages in the fourth model, media packages
always conclude with action steps for securing
additional information from the reference facility.

These final two models are founded on the premise that, if an
information need is expressed by a certain proportion of educators
in a given category, then the information response will be useful
to a large proportion of educators in that category, including
educators who never make individual requests. A group response
targeted to the entire category of educators can achieve a
desirable economy of scale.

It is important to distinguish #4 from a publishing house and
#5 from a media production studio. Both models involve the
preparation of group responses to specific information needs. The
group response serves as an overview of possible solutions or
alternatives. When the response is successfully prepared, each
person in the target group feels it was intended for him
personally, and he takes steps to act upon the content of the
response.

SUMMARY OF THE FIVE MODELS   Although quite different from each
                              other, all five models are
information processing systems. They can be characterized on the
basis of input, throughput, and output. In the following summary,
major aspects of each model are emphasized. Minor aspects appear
in parentheses.

MODEL 1.   INPUT. Individual request direct from client via
           mail and hotline.

           PROCESS. Search, package.

           OUTPUT. Individual response direct to client via mail.

MODEL 2.   INPUT. Individual request direct from client via
           mail and hotline. (Request sometimes relayed by SEA
           or LEA consultant who has encouraged client to use
           the service.)

           PROCESS. Search, package.

           OUTPUT. Individual response direct to client via mail.
           (Response sometimes conveyed to client by consultant.)

MODEL 3.   INPUT. Individual request relayed by field agent, who
           also helps client clarify request. (Request sometimes
           submitted directly by client, via mail or hotline.)

PROCESS. Search, package.

OUTPUT. Individual response relayed by field agent, who helps client interpret output and follows up co determine adequacy of information.

MODEL 4. INPUT. Request patterns, but not individual requests, are ascertained from SEA or IEA sources, as well as field surveys. High-frequency and high-priority needs are identified.

PROCESS. Search, transform, publish.

OUTPUT. Group response targeted on group of educaturs, contains provision for securing additional information.

MODEL 5. INPUT. Same as #4.

PROCESS. Search, transform, produce or secure audiovisual media response.

OUTPUT. Group response, media package or media "happening," contains provision for securing additional information.

PERSONNEL ROLES   The following personnel roles are implicated by the five models:

1. Project director

2. Reference specialist

3. Editor/publications specialist

4. Media specialist

5. Field agent

(6. SEA-LEA consultant)

Our visits to the Pilot States, together with the Sieber evaluation reports and other literature, cause us to delineate and distinguish the personnel roles as follows:

1. PROJECT DIRECTOR. Reports directly to the chief state school officer or his deputy. Is responsible for overall conduct of project, including personnel decisions, space/facility decisions, budget decisions, etc. With advice and consent of chief state school officer, sets policy for project and prepares annual

statement of objectives and activities. May be required to explain and defend project to the state school board or legislature. Devotes considerable time and energy to securing stable support for the project, both in the state agency and in school districts. Works with district superintendents to arrange for provision of services to their districts. Monitors and interprets federal activities in the information/dissemination area for the benefit of his state. Writes some proposals for federal support and assists others in writing proposals related to project. Is generally but not specifically familiar with all technical processes in the project. Devotes up to 25 per cent of his time to the project.

2. PROJECT MANAGER. Reporting to the director, the project manager is responsible for daily operation of the project, including office management, supervision of central and field personnel, routine operating expenditure, routine SEA and LEA liaison. Is quite familiar with all central and field operations. Accepts delegated functions from the director, such as personnel decisions and budget planning. Takes over from the director when arrangements with school districts approach operational status. Judges appropriate level of effort for request fulfillment and other tasks. Establishes and maintains various record-keeping systems. Devotes essentially full-time to the project.

3. PRINT RESOURCES SPECIALIST. Reporting to the project manager, the print resources specialist is one of two reference specialists in the central office. Receives requests, formulates a manual or computer search, conducts or delegates the actual search, screens output, and packages individual responses for clients. Understands the organization of educational literature, including indexing systems like the ERIC Thesaurus. Prepares "search logic" for a multi-term coordinate search of ERIC files. Assembles and maintains a collection of useful "fugitive materials" to include in response packages. Maintains a file of previous search results, under appropriate topic headings, to avoid duplicative searches.

4. HUMAN RESOURCES SPECIALIST. Reporting to the project manager, the human resources specialist receives requests, identifies consultants and other human resources in the SEA, colleges and universities, school districts, private industry, and other organizations. From these people, obtains information and secures services on behalf of clients. Develops and maintains a file of human resources according to topics of information need. Organizes small meetings to bring human resources face-to-face with clients. Understands

and adapts to SEA and LEA protocol for using consultants.
Maintains a file of exemplary sites in the state that
clients can visit to observe innovative programs.

5. EDITOR/PUBLICATIONS SPECIALIST. Reporting to the project
    manager, prepares information briefs on topics associated
    with high-frequency and high-priority of information
    need. Is able to read and interpret educational
    literature ranging from primary research papers to
    political/legal statements, capturing the essence of a
    topic's literature in an information brief. Prepares
    copy, arranges for graphics, typesetting, and publication.
    Arranges for distribution of information briefs through
    school district offices and schools. Assembles back-up
    materials on the topic of each brief, prepares packages
    consisting of PREP, PET, and other materials for clients
    who request further information after reading the brief.
    Assumes some responsibility for evaluation of usefulness
    of briefs and assessment of information needs of
    designated target audiences.

6. MEDIA SPECIALIST. Reporting to the project manager,
    prepares nonprint responses on topics associated with
    high-frequency and high-priority of information need.
    Not responsible for primary content of response, but
    responsible for selection of medium or channel,
    production of response, and follow-up evaluation of
    effectiveness. Chooses among real-time communication
    channels (such as radio and ITFS) and among buffered
    channels (such as audio cassettes and videotapes). Is
    cognizant of audiovisual resources available nationally;
    uses available resources in lieu of local production
    whenever possible. Establishes liaison with audiovisual
    building coordinators to ease hardware problems.
    Publicizes media packages and "happenings," arranges for
    maximum exposure within each target audience.

7. FIELD AGENT. Reporting to the project manager, the field
    agent is responsible for direct input/output
    communication with clients in a particular area.
    Establishes and maintains a local office where clients
    can telephone requests or leave messages. Establishes
    a small local collection of most useful reference
    materials, including reprints and packages like PREP that
    can be given to clients. Publicizes service throughout
    area by distributing brochures, attending faculty
    meetings, making presentations, etc. Works with
    individual client by discussing and clarifying problems,
    relaying a search request to the reference facility,
    conveying the response to the client, interpreting and
    discussing the information, and following up later to
    determine further client needs. To a limited extent,
    participates in actual program planning, committee

organization, etc., but withdraws from such activity when clients have as much information as can be provided. May be responsible for coordinating a team of part-time agents assigned to individual district offices and schools. Maintains records of all transactions. Maintains a file of local resources to which clients can in some cases be referred.

V. SELECTION CRITERIA

For each role identified above, we compiled a list of associated functions. There were several sources of information for this activity, but particularly notes made by Stanford-SDC staff during field visits to the three pilot state extension programs. In these visits the pilot state personnel were asked to describe their current roles and functions; their comments were extremely helpful. Other sources of relevant information were earlier reports -- for example, the evaluation reports by Sieber et al. and interim project reports prepared by the pilot programs, describing program operations and responsibilities.

After the list of functions was prepared for each role, each function was analyzed to estimate how essential it would be that a person filling the position be highly competent in the particular skill area. For each of the skill areas considered most essential, a judgment was then made that reasonable competence:

1. must be an entry requirement;

2. need not be an entry requirement, could be taught in a preservice training course of about two weeks' duration;

3. need not be an entry requirement, could be learned on the job within a reasonable period of time.

A minimum set of entry requirements consists of qualifications related to previous position (for example, in the case of Project Director), skills that are prerequisite to successful training, and fairly basic behavior traits which, though possibly trainable, would require an unrealistically long training period (e.g., "ability to present ideas clearly and convincingly").

Previous positions, prerequisite skill areas, and basic traits designated as entry requirements constitute suitable selection criteria for recruiting individuals to fill positions in the new extension programs. Because most of these new programs must be created essentially from the ground up, we advocate more stringent selection criteria than would probably apply if personnel were being hired for well-established programs.

Candidates for positions in the new programs should already have many of the basic skills required, so that they can operate effectively almost from the first day they are brought into the programs.

For example, it is felt that the Project Director must have had experience in management of educational programs and must already occupy a senior administrative position. Similarly, the Print Resources Specialist must already be familiar with basic procedures for acquiring, storing, and retrieving print materials, although he or she can be trained in the more specific operational procedures associated with the extension programs.

PPOJECT DIRECTOR

A. SELECTION CRITERIA AND METHODS OF DETERMINING SUITABILITY

1. From the time the Director is given responsibility for the Education Extension Services Project (EESP), he should occupy a senior administrative position and should report directly to the Chief State School Officer or his deputy. Thus a candidate for this position should already hold a position of equal or nearly equal status and responsibility in a state education agency, a large school district, or other appropriate agency.

   METHODS OF DETERMINING SUITABILITY: Records and credentials, including employment data and letters of reference, etc.

2. The candidate must have experience in program management; this should be in the field of education but need not necessarily involve a project similar to the EESP. This requirement is closely related to the first criterion, above.

   METHODS OF DETERMINING SUITABILITY: Records and credentials, including employment data and letters of reference.

3. An advanced academic degree is normally essential. The only exception might be if a candidate lacking an advanced degree had established a particularly strong reputation in the state for educational leadership.

   METHODS OF DETERMINING SUITABILITY: Transcripts and other academic records.

4. The candidate must have a forceful personality and an ability to present his ideas in a positive, convincing manner to key decision-makers (e.g., CSSO, state law-makers, etc.).

METHODS OF DETERMINING SUITABILITY: Behavior of candidate
in face-to-face interview (how well does he sell himself and
his ideas for the project); record of successes in prior
positions and projects requiring similar skills, as
determined by reference checks and self-report.

5. The candidate must be able to demonstrate that he maintains
   a broad awareness of critical trends in budgeting allocations,
   program priorities, and political and technical developments
   at the federal, state, regional, and local levels that might
   impinge on the successful maintenance and growth of the
   program(s) for which he has administrative responsibility.

   METHODS OF DETERMINING SUITABILITY: Candidate's responses
   during interview when asked what forces he believes have the
   greatest impact on programs he is currently managing or has
   previously managed. Responses should be judged in terms of
   the variety, scope, depth of analysis, and internal
   consistency of factors mentioned by the candidate. Note
   should be taken on the candidate's awareness of recent
   developments known to the interviewer, e.g., recent
   legislation.

6. Because the EESP is not (initially) an on-going program, it
   is highly desirable that the candidate show evidence of
   having previous experience in starting a new program of
   significant size, as opposed to simply maintaining
   established programs.

   METHODS OF DETERMINING SUITABILITY: Employment records,
   reports, and other evidence provided by the candidate and
   verified by reference checks. Size and complexity of
   projects previously initiated by the candidate should be
   determined.

7. Evidence of candidate's ability to identify funding sources
   and obtain support, including ability to write proposals for
   project funding, or at least to supervise such efforts, is
   desirable, though not essential. Such experience will
   strengthen the Director's ability to maintain funding
   continuity and growth for the EESP.

   METHODS OF DETERMINING SUITABILITY: Specific examples of
   prior successful proposals or other fund-raising efforts
   by the candidate.

8. Prior experience in some field related to information
   retrieval and/or dissemination is desirable but not
   essential.

   METHODS OF DETERMINING SUITABILITY: Employment records,
   reports, and other evidence provided by the candidate and
   verified by reference checks.

B.   POOLS FROM WHICH CANDIDATES MIGHT BE RECRUITED

1.   Administrators already at the appropriate management level
     in the State Education Agency concerned, whose present
     responsibilities can be adjusted to allow them to take on
     the EESP Director position for a suitable fraction of their
     time, e.g., one-fourth time.

2.   Administrators at slightly lower levels in the State
     Education Agency concerned, or in other education agencies.

                          PROJECT MANAGER

A.   SELECTION CRITERIA AND METHODS OF DETERMINING SUITABILITY

1.   The candidate must show evidence that he has basic
     management skills. These include the ability to handle
     personnel matters (maintaining staff morale; determining
     personnel needs; recommending new hires, promotions, and
     disciplinary actions to the Director); and to provide
     monitoring and quality-control of project schedules and
     budgetary actions (e.g., making frequent checks of project
     progress against schedules and projected expenditures;
         oving day-to-day expenditures within an overall budget
     plan).

     METHODS OF DETERMINING SUITABILITY: Employment records and
     letters of reference showing prior successful employment in
     a mar ,ement capacity; this experience need not have
     involved a large staff, but should give evidence of
     candidate's ability to assume operational responsibility for
     personnel and budgetary management as well as technical
     management.

2.   It is highly desirable that the candidate have some
     familiarity with the field of information/materials
     gathering and dissemination. This experience might be in
     the context of library work, computer-based retrieval
     methodology, or other information-processing applications.

     METHODS OF DETERMINING SUITABILITY: Employment records and
     reference checks showing prior experience in jobs related to
     information gathering and dissemination. Transcripts
     showing academic training in relevant subject areas.

3.   Some knowledge of the operations of public school systems is
     desirable, so that the candidate can interact effectively in
     matters involving district protocols and coordination with
     district staff members, and can better evaluate the problems

and performance of the field agents who must work with the districts.

METHODS OF DETERMINING SUITABiLITY: Employment records and reference checks showing prior work experience in a public school system or other agency having close contacts with schools. Transcript, showing academic training related to school organization and operations. Statements or questions by the candidate during an interview that indicate awareness of central issues in working with school systems.

4. An advanced academic degree is normally essential; an exception may be made if the candidate has a particularly strong managerial and technical background.

    METHODS OF DETERMINING SUITABILITY: Transcripts and other academic records.

5. Because the Project Manager must represent the project in interactions with districts, and must provide guidance and reinforcement to his own project personnel, the candidate should have basic social skills, e.g., he should be reasonably friendly and outgoing, and able to communicate effectively with others.

    METHODS OF DETERMINING SUITABILITY: Candidate's apparent enthusiasm and self-presence during the face-to-face interview. Appraisals by the candidate's former supervisors.

B. POOLS FROM WHICH CANDIDATES MIGHT BE RECRUITED

1. Present or former librarians who have had managerial responsibility (i.e., who have supervised other personnel and have been required to make day-to-day budget, personnel, and scheduling decisions). Preferably this experience would be in public schools, but could be in a university setting, a public library, or a research institution.

2. Individuals with managerial experience in a school system, but not specifically in a library context. Examples might be former heads of small curriculum-development projects, resource centers, dissemination projects, or research projects.

PRINT RESOURCES SPECIALIST

A.   SELECTION CRITERIA AND METHODS OF DETERMINING SUITABILITY

1.   The candidate must understand and be able to apply
     procedures for acquiring and indexing print-related
     information and materials. This competency need not be in
     the area of educational materials, specifically, but a
     knowledge of basic methodology is essential.

     METHODS OF DETERMINING SUITABILITY: Employment records
     showing that the candidate now holds or has held a position
     requiring the desired skills. Alternatively, academic
     transcripts showing successful completion of appropriate
     library-related or other information-processing coursework.
     A third method would be the administration of a brief test
     and/or performance measure requiring the candidate to
     demonstrate appropriate skills and knowledge.

2.   The candidate should have a general knowledge of document
     surrogation systems and their use (e.g., procedures for
     using a thesaurus or other reference source to designate
     appropriate descriptors for desired information and
     materials). It is not necessary, however, that the
     candidate be familiar with a specific set of descriptors or
     reference sources (e.g., ERIC) since these can be acquired
     during preservice or inservice training.

     METHODS OF DETERMINING SUITABILITY: Evidence of prior
     employment in positions requiring comparable knowledge;
     transcripts showing suitable academic training; tests or
     performance measures administered as a screening procedure.

3.   The candidate must be familiar with procedures for performing
     manual searches of literature and reference sources.
     Knowledge of procedures used in computer-based literature
     searches is highly desirable but not an essential entry
     skill.

     METHODS OF DETERMINING SUITABILITY: Evidence of prior
     employment in positions requiring comparable knowledge;
     transcripts showing suitable academic training; tests or
     performance measures administered as a screening procedure

4.   Some entry knowledge of the general field of education, and
     of the organization of educational literature, is essential
     if the candidate is to become effective in the job soon after
     being hired. It is not necessary, however, that he be
     intimately familiar with specific reference sources such as
     the EDUCATION INDEX, ERIC, etc.

METHODS OF DETERMINING SUITABILITY: Employment records and letters of reference showing experien:e in edu_ation-related positions; evidence of work experience requiring knowledge of educational materials and literature; transcripts showing relevant academic training.

B. POOLS FROM WHICH CANDIDATES MIGHT BE RECRUITED

1. Present or former librarians with recent experience in schools, universities, or research institutions.

2. Individuals with recent academic training in library sciences, information management, or computer-based information retrieval techniques.

HUMAN RESOURCES SPECIALIST

A. SELECTION CRITERIA AND METHODS OF DETERMINING SUITABILITY

1. The candida.e should have general familiarity with the practical operations of public school systems and at least a superficial knowledge of many of the educational issues likely to be of interest to school personnel. A broad scope of knowledge and interest is more important·than in-depth expertise in a single aspect of educational theory or practice.

   METHODS OF DETERMINING SUITABILITY: Employment records showing prior work experience that would have brought the candidate into contact with a wide variety of school problems and operations. Statements during the interview that demonstrate to the interviewer the candidate's familiarity with many issues of interest to practicing educators.

2. It is desirable that the candidate already know some specialists and consultants in the state who have expertise in a variety of different educational fields. He should also know about some of the sites in the state that have exemplary programs.

   METHODS OF DETERMINING SUITABILITY: Employment records showing work experience that would have required comparable knowledge. Candidate's ability during the interview to answer questions about knowledgeable specialists, resource persons, and exemplary sites relevant to several key educational issues raised by the interviewer.

3. The candidate must be able to motivate educational
   specialists to provide services to the LEA's. He must be
   able to express the need for the specialist's participation
   as cogently as possible and should know how to make that
   participation attractive.

   METHODS OF DETERMINING SUITABILITY: The candidate's ability
   to present ideas persuasively during the interview.
   Employment records and letters of reference showing previous
   experience as a coordinator of human resources.

4. Since the human resources specialist will be responsible for .
   arranging and facilitating meetings between experts and
   clients, he must be skilled in small group dynamics. He
   should be able to put people at their ease and aid in the
   communication between them.

   METHODS OF DETERMINING SUITABILITY: Candidate's behavior
   during face-to-face interview. References from former
   supervisors on candidate's social skills.

B. POOLS FROM WHICH CANDIDATES MIGHT BE RECRUITED

1. Individuals presently or recently holding positions requiring
   coordination of human resources.

2. Individuals presently or recently holding positions in the
   SEA that involve extensive contact with or knowledge of
   educational experts, both within the agency and outside of
   it.

EDITOR/PUBLICATIONS SPECIALIST

A. SELECTION CRITERIA AND METHODS OF DETERMINING SUITABILITY

1. The candidate must have a sufficient grasp of the overall
   field of education to be able to identify trends in the
   pattern of requests for different types of information;
   i.e., he must be able to recognize common themes and
   issues underlying specific requests, in order to identify
   issues associated with high-frequency and high-priority
   information needs.

   METHODS OF DETERMINING SUITABILITY: Employment records
   showing prior experience in jobs exposing the candidate to
   a wide range of educational literature, including materials
   relating to recent educational developments and resources.
   Transcripts and other records showing academic training

that involved studies of literature on a wide range of educational topics.

2. The candidate must understand educational concepts and terminology and be able to identify and summarize key issues of a given topic in concise terms. This understanding must encompass all levels of complexity, from primary research papers to political-legal documents, for the synthesis of topical issues.

METHODS OF DETERMINING SUITABILITY: Employment records and letters of reference indicating experience and ability in information analysis, specifically in education. Transcripts and other records showing academic training in educational theory.

3. Since one of the primary duties of this position is the production of short information briefs, the candidate must possess well-developed writing skills that enable him to express ideas clearly and succinctly.

METHODS OF DETERMINING SUITABILITY: Employment records and letters of reference showing experience in writing short articles or briefs. A brief test in which the candidate is given information on one or two topics and asked to write briefs on them. Examples of articles or papers written by the candidate.

4. The candidate should be able to identify and assemble appropriate materials on an educational topic, as followups to information briefs. The candidate should be able to supervise the compilation of such materials into packages and should be able to adapt materials where necessary.

METHODS OF DETERMINING SUITABILITY: Employment records or other evidence of experience in assembling and packaging information materials.

B. POOLS FROM WHICH CANDIDATES MIGHT BE RECRUITED

1. Individuals presently or recently involved in the production of information analysis products (e.g., ERIC clearinghouse personnel).

2. Editorial personnel associated with school districts, state education agencies, or similar agencies.

3. Journalists and technical writers with p t culaily strong writing skills and some familiarity wi ne field of education.

MEDIA SPECIALIST

A.   SELECTION CRITERIA AND METHODS OF DETERMINING SUITABILITY

1.   The candidate must have a sufficient grasp of the overall
     field of education to be able to identify trends in the
     patterns of requests for different types of information;
     i.e., he must be able to recognize common themes and issues
     underlying specific requests, in order to identify issues
     associated with high-frequency and high-priority information
     needs.

     METHODS OF DETERMINING SUITABILITY: Employment records
     showing prior experience in jobs exposing the candidate to
     a wide range of educational literature, including materials
     relating to recent educational developments and resources.
     Transcripts and other records showing academic training
     that involved studies of literature on a wide range of
     educational topics.

2.   Knowledge of the operational characteristics, costs,
     maintenance requirements, and other strengths and weaknesses
     of the various nonprint communication media for disseminating
     different types of information is essential.   The candidate
     must also be aware of audiovisual resources available
     nationally, or at least know where to obtain the information
     rapidly.

     METHODS OF DETERMINING SUITABILITY: Employment records
     showing evidence of prior job experience in selecting
     nonprint media that are optimally suited to specific
     communication/dissemination tasks.   Transcripts and other
     records of academic training in the selection and design of
     nonprint media.

3.   Where appropriate audiovisual materials are not already
     available, the candidate must know how to specify the
     requirements for such materials and how to arrange their
     local production.

     METHODS OF DETERMINING SUITABILITY: Employment records or
     other evidence of experience in arranging for and monitoring
     the production of audiovisual materials according to
     specifications.

4.   The candidate should know how to publicize audiovisual
     materials that he has arranged to make available and to
     facilitate their maximum exposure.

     METHODS OF DETERMINING SUITABILITY: Employment records or
     other evidence that the candidate has had experience
     preparing publicity materials and working with "gatekeepers"
     such as editors.

B. POOLS FROM WHICH CANDIDATES MIGHT BE RECRUITED

1. Audiovisual media specialists associated with school
    districts, state education agencies, universities, or similar
    agencies.

2. Recent graduates of audiovisual departments in schools of
    education.

FIELD AGENT

A. SELECTION CRITERIA AND METHODS OF DETERMINING SUITABILITY

1. The field agent will be working primarily on his own, without
    regular contact with colleagues or supervisors. Therefore,
    he must be able to function autonomously. Since he will
    not be receiving regular reinforcement, either as feedback
    from clients or as praise from supervisors, he must be
    strongly self-motivated and able to maintain a high morale
    level. He must be able to function in a somewhat marginal
    role -- without clearly defined affiliations.

    METHODS OF DETERMINING SUITABILITY: Evidence of prior
    employment in a similar position (i.e., self-sufficient,
    non-affiliated). Some indication in a face-to-face interview
    of a strong self-concept.

2. The candidate must have worked in a public school system,
    preferably at the school level (e.g., teacher, principal)
    rather than at the district level.

    METHODS OF DETERMINING SUITABILITY: Employment records and
    references.

3. It is preferable that the candidate has worked in the
    particular school district in which he sets up his initial
    contacts. However, this is not essential.

    METHODS OF DETERMINING SUITABILITY: Employment records and
    references.

4. The candidate must be a "problem solver." That is, he must
    be able to listen attentively to potential clients and
    relate their needs to the services he is offering.
    Furthermore, he must be able to convince potential clients
    of the value of his services to the solution of their
    problems.

    METHODS OF DETERMINING SUITABILITY: Primarily through

face-to-face interview. The ability of the candidate to
listen to and interpret ideas is particularly important.
His ability to understand ideas well enough to relate them
to the information services he will represent should be
judged. Employment records and references for positions
requiring frequent social interaction.

5. The candidate must convey enthusiasm for the services he
represents and must be able to generate enthusiasm for these
services in others.

   METHODS OF DETERMINING SUITABILITY: This will have to be
   determined almost exclusively by the interview. The
   interviewer should look for signs of eagerness to begin,
   such as suggestions by the candidate of ways in which the
   services might be publicized and promoted.

6. The candidate must be willing to travel for much of his time.

   METHODS OF DETERMINING SUITABILITY: Interview.

7. The candidate must perform well in group settings, both
   large and small. This includes the ability to make
   presentations.

   METHODS OF DETERMINING SUITABILITY: Prior experience
   involving this kind of activity as evidenced in employment
   records and references. Evidence of poise and composure
   during the interview.

8. One of the most essential characteristics the candidate must
   possess is the ability to diagnose information needs based
   on discussions with clients and to translate these needs
   into searchable objectives stated in concise narrative form.
   This requires the ability to "negotiate" or pinpoint the
   search through interactive dialogue with the client.

   METHODS OF DETERMINING SUITABILITY: Evidence of prior
   employment in a position requiring analytic skills. A brief
   test requiring the candidate to assume the role of a field
   agent negotiating a search with a client (the interviewer).

B. POOLS FROM WHICH CANDIDATES MIGHT BE RECRUITED

1. Individuals presently or formerly holding similar loosely-
   defined positions, e.g., ESEA Title III staff.

2. School people expressing an interest and ability to shift
   to this kind of work.

3. SEA or LEA information specialists.

VI.   TASK AND SKILLS/KNOWLEDGE ANALYSIS

This section presents a detailed analysis of the tasks and the skills or knowledge that are required to perform five personnel roles identified and functionally explicated in Sections IV-V. The five roles are: (1) project director, (2) project manager, (3) print resources specialist, (4) human resources specialist, and (5) field agent.   Two other roles, the editor/publications specialist and the media specialist, were considered to be positions that would occur only in the more established projects and so are not included in this analys s of basic roles.

The task analysis was based on readings of major reference materials and theoretical papers and on perspectives gained from site visits to the three Pilot State Dissemination Programs and readins of their reports and activities.   There is heavy emphasis in this analysis on start-up activities, so that the training program that evolves from this analysis can focus on the requirements for establishing a new or expanded operation.   In recognition of the variations that are likely to occur from site to site, the role models were developed to include a range of activities.   It is expected that there will be some variation in the numbers and capabilities of the project staff from site to site.   In some cases, one individual may be responsible for tasks that fall under a number of different roles in this analysis.   In other cases, several individuals may share responsibilities that this analysis assigns to a single role.

The task analysis and identification of related requirements in skills/knowledge serves as a basis for identifying components or modules of a preservice or early inservice training program. The outline of tasks does not represent a time-sequenced flow of activities, nor does it specify the method for accomplishing the preservice or inservice training.   Rather, it represents a breakdown of the five roles into their respective tasks as a basis for determining which of these tasks require skills or knowledge that can be provided through preservice or inservice training.

ORGANIZATION   The analyses of each of the five roles are
                organized as follows: (1) introductory
remarks, (2) task analysis, (3) trainable skills/knowledge.

The introductory remarks state the primary responsibilities of
the role and explain some of the possble variations in scope or
level of involvement that each role implies. The task analysis
contains a description of each task followed by a discussion of the
skills and/or knowledge required by that task. The last part,
trainable skills/knowledge, outlines the skills and/or knowledge
described in the task analysis as being amenable to either pre-
service or inservice training.

The section closes with a preliminary list of training
materials. More detailed information on training resources of
various kinds is presented in the "Trainer's Book" and the
"Trainee's Book" (volumes 2 and 3 of this report).

PROJEC DIRECTOR

The Project Director represents a high level official in the state eć ation agency, who has overall responsibility for the project and whose pi_.ary duties are the official representation of the project and the development of a project plan.

In start-up operations, one of the most important responsibilities of the Director will be the procurement of funing support for the project and the institutionalization of the project. Although the Director is seen as a part-time position, a greater amount of his time and effort are required at this stage than later when the project achieves an ongoing status. It is also during start-up that the Director must devote considerable effort toward the development of a long-range project plan.

Of the three pilot states, only one had a position similar to that described here. In the other two, the role of the Director was combined with that of the Project Manager. In states where there is provision for only one administrative/managerial position, the Director's tasks may well be included in the Manager's role, especially once the project is established.

The success of the Director depends, to a great extent, on his personality and experience in education. Therefore, training for this position would largely involve his developing a good background in the project's goals and objectives, and relating these to his existing skills and knowledge in program administration.

<u>Task Analysis</u>
(Project Director)

A. <u>PROJECT REPRESENTATION AND INSTITUTIONALIZATION</u>

1. <u>Representation in SEA</u>. The Director represents the project in the SEA.
    He is the formal project contact with all other SEA departments and
    ensures that the interests of the project are represented when SEA
    policy decisions are made.

    a. <u>Liaison with SEA Officials</u>

        <u>Task Description</u>. The Director establishes and maintains regular
        communication with his counterparts in other SEA departments in
        order to keep informed of the important developments throughout
        the agency and in order to make the services of the project well
        known throughout the agency. He attempts to establish cooperative
        arrangements wherever appropriate, so that the project is not only
        widely used by the SEA, but also has much of the SEA's resources
        to draw upon.

        <u>Skills/Knowledge Requirements</u>. This task requires a knowledge
        of the structure of the state education agency and a familiarity
        with some, if not most, of the departments in the agency. The
        Director must be able to recognize resources within the agency that
        will be useful to the project and must be able to present the
        project as a valuable resource, in turn, to other departments.
        Examples of cooperative arrangements and experiences in inter-
        departmental communications can be presented in a preservice
        training program.

    b. <u>Representation on SEA Committees</u>

        <u>Task Description</u>. The Director serves as the project representative
        on committees or councils in the SEA. In this capacity, he acts on
        the project's behalf in any discussions or planning sessions where
        the interests of the project may be affected to avoid conflicts or
        duplication of efforts. By his continued representation of the
        project, the Director helps to establish its identity.

Skills/Knowledge Requirements. For this task, the Director must
be skilled in small group dynamics. He must be able to work
cooperatively within a group so that the decisions or recommenda-
tions of the group will not seriously conflict with the purposes
or goals of the project.

2. Representation to LEA's. The Director serves as the primary contact
for the superintendents of local school districts. As the formal
representative of the project, he initiates contacts and announces
important changes or developments in the project that may affect the
LEA's.

   a. Initiation of LEA Contacts

   Task Description. Although the mechanism for installing the
   project's service in local districts may vary from state to
   state, the initial contact with the district office is made by
   the Director. This contact, which may be made by phone and/or
   letter, explains the project and its goals and outlines the
   relationship between the district and the project. This contact
   basically serves to introduce the project to the local districts
   and to establish communications.

   Skills/Knowledge Requirements. The Director must have good basic
   communications skills so that he is able to present the project
   clearly and cogently to the LEA's. If he is to relate the
   services of the project to district needs, he must have some
   knowledge of local interests and priorities. Basic communications
   skills are considered an entry requirement, but preservice training
   might include an introduction to the types of local interests and
   needs that should be considered in introducing the project at the
   district level.

b. Announcements to LEA's

Task Description. When there is a major shift in project policy relative to the LEA's or when a new service or product is offered, the Directo makes an official announcement to the LEA's. He indicates any changes in the relationship between the project and the districts and explains the effect project changes or developments will have.

Skills/Knowledge Requirements. This task also requires good basic communications skills. The Director must be able to explain developments or changes in such a way as to minimize misunderstanding.

3. Representation Before State Governing Bodies. The Director explains the project and its objectives to state governing bodies such as the state legislature, its education committee, or the state school board, and attempts to secure funding for the project from state sources.

   a. Monitoring of State Priorities and Funding Patterns

   Task Description. The Director maintains awareness of the state's program priorities and funding patterns.

   Skills/Knowledge Requirements. The Director must understand the channels for decision-making and recommendations on funding matters in the state. He must be able to recognize trends in state priorities and have a good awareness of the political aspects of state policy decisions.

   b. Solicitation of Funding Support

   Task Description. The Director determines the appropriate channels through which to seek funding support, based on his awareness of funding patterns as stated in the preceding task. He then attempts to obtain stable support for the project by relating it to the priorities of the state or by demonstrating its value in the context of current patterns.

Skills/Knowledge Requirements. This task requires the ability
to present the project, its services and goals, in a cogent manner.
It is especially important that he be able to show the project's
value both in terms of current priorities and in terms of long-
range plans.

c. Explanation of Project

Task Description. The Director may be called upon to explain the
project to high level state officials or governing bodies. He
describes the types of services provided by the project and puts
the project into the context of the SEA organization, as well as
showing the relationship it has with the LEA's and/or other organ-
izations.

Skills/Knowledge Requirements. In addition to basic communications
skills, the Director must have a general knowledge of the project's
goals, operations, services. Finally, he should understand the
theory and background of change and innovation and be able to
discuss the project in these terms.

4. Representation at the Federal Level. The Director is responsible for
seeking funds from Federal sources. he decides on the appropriate
funding efforts for the project and attempts to keep stated project
goals in line with Federal priorities.

a. Monitoring of Federal Priorities and Funding Patterns

Task Description. The Director maintains awareness of Federal
program priorities and funding patterns. He keeps abreast of
the structure of federal agencies and organizational changes.

Skills/Knowledge Requirements. The Director should understand
the organization of Federal agencies, especially the Office of
Education and the National Institute for Education. He should
know which divisions (e.g., NCEC) sponsor programs related to the
project and whom to contact within the divisions. Preservice

training should provide an introduction to the framework of Federal organization.

b. Proposal Efforts

Task Description. In seeking Federal funds, the Director writes proposals or assists in writing proposals. These proposals may be unsolicited or in answer to specific requests.

Skills/Knowledge Requirements. The task requires the ability to relate the project and its objectives to the specific program needs of a particular agency. The Director must be familiar with standard proposal format and should be able to state the terms of the proposal clearly and persuasively. Examples of successful proposals may be presented in preservice training. Training might also include discussion of pitfalls to avoid in proposal preparation.

c. Federal Liaison

Task Description. The Director serves as the formal project representative for any contact with USOE, NIE or other Federai agei cies. He explains the project to Federal representatives and outlines its operating framework, especially in comparison with other centers.

Skills/Knowledge Requirements. The Director should be aware of the structure and protocol of the agency with which he has contact. He should be able to relate nis project to similar efforts across the country. A Federal overview and context to which the individual project may be related can be given in preservice training.

5. Non-governmental Institutionalization. It is desirable for the project's stable support that it have as broad a user base as possible. Therefore, the Director has the responsibility of identifying and contacting private users, such as professional organizations and private universities, to establish cooperative arrangements.

a. Identification of Potential Private User Groups

Task Description. The Director identifies groups with whom the project might establish cooperative arrangements. He does this by drawing upon his own knowledge of various professional groups and institutions and by acting on the suggestions of colleagues in the SEA. There may also be input in the form of inquiries from private groups.

Skills/Knowledge Requirements. The Director should be aware of the types of groups that may be interested in the project's services and that may be able to serve as resources to the project. Examples of possible types of contacts and/or examples of existing cooperative arrangements may be included in preservice training.

b. Liaison with Private User Groups

Task Description. Having identified potential private user groups, the Director initiates contacts with them and discusses with them the possible benefits that each might provide the other.

Skills/Knowledge Requirements. The Director must be able to articulate the mutual benefits that would be derived from a cooperative arrangement with a particular group. He must understand some of the technicalities of setting up such an arrangement and can be helped in this understanding by examples of previc 3 arrangements provided in preservice training.

6. General Project Representation

Task Description. The Director is the spokesman for the project in all its public contacts. He appears at meetings and conferences on behalf of the project. He attempts to make the project widely known and understood.

Skills/Knowledge Requirements. In addition to good basic communications skills, the Director must have some skills in public speaking. He must know how to present the project in a way that will be effective for a particular audience. Although the communications

skills and poise needed for this task are considered entry
requirements, the preservice training session might provide
the opportunity for discussion of the task and what it has
involved for directors of other centers.

B. PROJECT ADMINISTRATION

1. Project Planning. The Director is responsible for developing a long-
range project plan that provides for growth and change in keeping with
new developments and procedures in information dissemination and
utilization. He ensures that the project is well-coordinated with
existing agencies and departments in the SEA. In accordance with the
long-range plan, he sets project policy and states it in terms of
specific objectives and goals.

a. Development of a Project Plan

Task Description. Based on the policies and priorities of the
SEA, and in coordination with the SEA's existing plans, the
Director sets the project's main goals and develops a long-
range plan for meeting these goals.

Skills/Knowledge Requirements. For this task, the Director must
have a good knowledge of his SEA. He must be able to relate his
project to the existing organization as well as to potential
developments in organization and priorities. He must also have
a knowledge of developments and trends in information dissemination.
Preservice training can provide an overview of information dissem-
ination as well as examples of project plans for other centers.

b. Statement of Objectives and Policy Development

Task Description. Based on the project plan, the Director states
the goals of the project, and the steps necessary to reach the
goals, in terms of specifically expressed objectives. He develops
and establishes major project policy in keeping with these specific
goals and objectives.

Skills/Knowledge Requirements. The Director should have knowledge and skills in formulating and refining project goals. He must also be able to derive spec_fic objectives from the project goals and state them clearly. Training in goal setting and the definition of objectives can be included in the preservice training session.

c. Establishment of Evaluation Procedures

Task Description. In order to monitor the completion of objectives and the project's progress toward its goals, the Director establishes evaluation procedures, including the methods and frequency of evaluation.

Skills/Knowledge Requirements. The Director should be acquainted with various methods of performance evaluation and should know how to set up a system for ongoing project evaluation. Methods of evaluation can be discussed in preservice training and examples of evaluation procedures used in other centers can be examined.

2. Project Communications. The Director is responsible for formal and informal communications between the project and the Chief State School Officer (CSSO) or his deputy. He is also responsible for establishing and maintaining communications with Directors of other projects.

a. Communications with CSSO

Task Description. It is the responsibility of the Director to keep the CSSO informed of project activities and progress. This he does through informal, verbal communications as well as through formal reports.

Skills/Knowledge Requirements. The Director should be able to recognize the key developments that should be reported to the CSSO and should be able to phrase them clearly and succinctly. Preservice training should include discussion of reporting procedures in other centers, including the nature of the content, although some variation may be expected among the various state agencies.

b. Communications with Other Directors

Task Description. The Director attends meetings and conferences
and communicate: informally with the Directors of the other
projects. In his communications with other Directors, he reports
on major developments in his own project and learns of developments
in other projects. These communications also serve as aids in
providing inservice education of the individual directors, by
providing the opportunity for the exchange of experiences and ideas.

Skills/Knowledge Requirements. The Director should be acquainted
with other projects and their Directors. He should be aware of
similarities and differences between other projects and his own.
And he should be able to apply what he learns of other projects
to the development of his own project and himself as its Director.
Preservice training should provide the opportunity for the
Directors to become acquainted with each other and with the other
projects.

Trainable Skills/Knowledge
(Project Director)

A. PROJECT REPRESENTATION AND INSTITUTIONALIZATION

1. Representation in SEA
   - Good overall knowledge of the project's context in respect to SEA, LEA's, etc.*

   - Understanding of the theory and background of change and innovation, especially in relation to the project.*

   - Ability to recognize SEA resources useful to the project.

   - Ability to present project as a valuable resource to other departments in the SEA.

   - Some skills in small group dynamics.

2. Representation to LEA's
   - Ability to relate project service to local needs.

   - Knowledge of the types of local interests that should be considered in LEA communications.

3. Representation Before State Governing Bodies
   - Ability to relate project to state trends and priorities.

4. Representation at the Federal Level
   - Understanding of the organization of federal agencies, especially USOE and NIE.

   - Familiarity with standard proposal formats and awareness of the elements of a good proposal.

   - Awareness of the federal context of the project.

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*This knowledge is considered necessary to all tasks involving representation of the project, although it is listed only here.

5. Non-governmental Institutionalization

- Awareness of types of organizations with which the project might form beneficial cooperative arrangements.

- Understanding of the details of setting up various types of cooperative arrangements.

B. PROJECT ADMINISTRATION

1. Project Planning

- Knowledge of developments and trends in information dissemination and utilization.

- Ability to set and refine project goals.

- Awareness of various methods of performance evaluation.

2. Project Communications

- Familiarity with other projects and their Directors.

PROJECT MANAGER

The Project Manager's primary functions are general management, project
representation, and daily project supervision. The relative emphasis, scope,
and level of involvement in each of these three functions may vary somewhat
from one state to another, depending on state policies, personnel considera-
tions, individual management styles, and other considerations.

One factor bearing heavily on the relative emphasis given to different types
of activities will be the level of development of the project in a given state.
In the early stages of a project's development, heavy emphasis will normally
be placed on start-up administrative decisions, on establishing an initial
flow of activities and a project organization, on establishing LEA arrangements,
and on supervising the acquisitions for a local collection. Later in the
project's development, greater emphasis will be shifted to the streamlining of
on-going operatioons so as to gain higher efficiency, and to adding new program
capabilities so as to expand its services and its clientele.

There may also be considerable variation in the scope of the Manager's
role. He may be called upon to assume some or all of the duties of the
Project Director if there are no provisions for a Director's position.
He may, on the other hand, spend almost all of his time in management,
with very little participation in search or acquisitions activities.

The size of the project and the capabilities of other project staff
greatly affect the Manager's level of involvement in specific tasks. The
descriptions that follow reflect a fairly high level of involvement, but
it is quite likely that some of the tasks will be performed by another
member of the staff. For example, in some centers the Field Agent may
make arrangements for installation of service in LEA's. In a very large
center, the Manager may have little time for active participation in
dissemination activities, while a small center may require that he act
as part-time Print Retrieval and Human Resources Specialists as part of
his regular duties.

Task Analysis
(Project Manager)

A. GENERAL MANAGEMENT

1. Administrative Decisions. The Project Manager must function as the
    project's decision-maker at the operational level. In this function,
    he sets project policy (in coordination with the Project Director)
    on all aspects of project operation.

    a. Personnel Decisions

        Task Description. The Manager is responsible for making
        personnel decisions. He plans and carries out recruitment,
        interviews and hires staff members, and evaluates the staff
        members' performance.

        Skills/Knowledge Requirements. In order to perform this task
        effectively, the Manager must understand the needs of the
        project and, particularly, the requirements of the individual
        roles. Training should provide the Manager with the selection
        criteria for project staff members and methods of determining
        the suitability of applicants. Training should also provide the
        Manager with a working-level understanding of the day-to-day
        task requirements of each role or position, so that he can
        assess the performance of staff members.

    b. Facilities Planning

        Task Description. The Manager is in charge of the project's
        physical plant. He makes space allocations and arranges for
        necessary equipment, furniture and supplies.

Skills/Knowledge Requirements. This task requires entry
skills in office management. Equipment needs will be
determined by the individual center, while the mechanism
for requisitioning supplies and materiel must be acquired
on the job. Training should acquaint Managers with available
equipment, including microfiche readers, communications
terminals, etc. to aid in his selection for the project.

c. Budget Allocations

Task Description. The Project Manager assesses project needs,
sets priorities, and makes resource allocations accordingly.

Skills/Knowledge Requirements. The Manager must be able to
relate available funds to priorities within the project.
Therefore, some knowledge of program management is considered
an entry requirement. Preservice training should review the
experiences of project managers from the pilot states. More
specific procedures that differ widely from site to site must
be learned on the job.

2. Periodic Reporting. As the overseer of the project, the Project
Manager is responsible for the regular reporting, formal and
informal, of the various aspects of the projects.

a. Service Records

Task Description. The Manager synthesizes and/or compiles
project service records for periodic (monthly or quarterly)
reports. These reports reflect the routine services provided

by the project, including types of requests, frequency,

types of requestors, materials distributed, etc. The Manager

may supervise the preparation of these reports rather than

preparing them himself.

Skills/Knowledge Requirements. The Manager must be able to

present a clear picture of the records in a concise form that

covers all important aspects of project service. Whether he

prepares the reports himself or supervises their preparation,

he must have a clear idea of the kinds of information such a

report should contain. In addition to his basic entry

communication skills, examples of the reports of other projects

presented and discussed in the training session will provide

guidance.

b. Project Progress Reports

Task Description. For the use of the Project Director and

others, the Manager prepares regular reports on the progress

of the project. These reports are concerned with internal

operations, including staff time, expenditures, problem areas,

and new developments.

Skills/Knowledge Requirements. Ability to communicate clearly

in writing, and an understanding of the information needs of the

intended readers are essential. General communication skills

should be part of the entry requirements for the position, but

pre-service training should include familiarization with examples

of progress reports prepared by other sites. Individual states

will have varying reporting requirements which must be
learned on the job; however, the pre-service training
should include directions on any standardized Federal
requirements.

c. Major Project Reports

Task Description. The Manager assists the Project Director in
the preparation of major project reports. These major reports
state the project's objectives and the degree to which they are
being met. They provide an overall accounting to the project's
sponsoring agency or agencies.

Skills/Knowledge Requirements. The Project Manager must be
able to bring together the most important features of the
project and report them in clear terms. Skills and knowledge
requirements are generally the same as those described above
(Part b, Project Progress Reports).

3. Staff Development. It is the responsibility of the Project Manager
to ensure that his staff maintain the up-to-date skills and know-
ledge they need to function effectively in their positions. It is
his duty to keep abreast of staff activities and to provide the
opportunity for suggestions for operational improvement.

a. Assignment of Staff Responsibilities

Task Description. The Project Manager establishes the flow
of activities and relates it to the responsibilities of the
professional and clerical staff. He determines the areas in

which the clerical staff can provide assistance and back-up
to the professional staff, e.g., in the routine routing of
requests and processing of materials.

Skills/Knowledge Requirements. The Manager must have a
good overall understanding of the project and its various
functions. He must be able to see the relations of the
project activities to one another. He must be able to
apply this overall picture to the roles of his staff
members to ensure a smooth flow. He must be able to
assess the capabilities of his clerical as well as his
professional staff to determine the areas where they will
best be able to provide support. General management skills
required for this task should be supplemented by examples
of other project organizations and the experiences of other
project managers in the utilization of manpower and flow of
activities.

b. Staff Meetings

Task Description. The Manager holds regular (e.g., weekly or
bi-weekly) staff meetings. These meetings provide communication
on a regular basis between the Manager and the staff and serve
to keep both well informed of recent activities. At these
meetings the staff reviews problems that have arisen, including
difficult or unusual requests, and discusses possible solutions.

At the same time, the Manager uses this opportunity to
share information he has gained from his contacts with
field agents and with other centers.

Skills/Knowledge Requirements. If these meetings are to
be truly useful and effective, the Manager should have some
skills in group dynamics as well as in personnel management.
He must be able to offer suggestions tactfully and accept
suggestions with an open mind. These skills are considered
entry requirements, although preservice training might
usefully include discussions c staff-development procedures
used in other sites.

c. Inservice Training

Task Description. The Manager arranges for periodic updating
of staff skills through inservice training. This training
may be in the form of workshops, seminars, self-study materials,
or lectures. The Manager may personally present the instruction,
or may coordinate its presentation by another individual or
group.

Skills/Knowledge Requirements. This task requires that the
Manager stay abreast of technical and procedural developments
pertinent to the center's operations, including any improved
methodology developed by other sites. For this purpose,

pre-service training of the Manager should include

familiarization with relevant literature sources related

to information retrieval, dissemination, and change strategies.

The Manager must also be aware of off-the-shelf and newly

developed training packages and other resources available for

providing inservice instruction. Some familiarization with

such resources should be included in the Manager's pre-service
training.

d. Personnel Relations

Task Description. In addition to regular staff meetings, the

Manager consults with individual staff members when particular

problems, personal or professional, arise.

Skills/Knowledge Requirements. Good interpersonal skills

necessary for this task are included among the entry qualifications.

Discussion in the training session of this aspect of the Manager's

role by Managers' of the pilot projects should provide valuable

background in the kinds of problems that might arise and the

solutions that might be applied.

B. PROJECT REPRESENTATION

1. Liaison Activities. The Manager represents the project in transactions and meetings with state and local education agency personnel. These liaison activities are concerned primarily with ongoing and operational activities, in contrast to the Director's focus on policy issues.

a. Contacts with Local Agencies

Task Description. Although the Director may be responsible initially for contacts with local superintendents, the Manager continues as liaison between the central office and the local agencies. He works out the detailed arrangements for the provision of services--including the kinds of LEA support that are required--develops methods for continuing communications, and solicits reactions and suggestions concerning the services. The Manager works to develop a supportive environment at the local central office for the Field Agent activities. As part of this task, the Manager encourages LEA's to employ their own field agents at local expense.

Skills/Knowledge Requirements. The Manager should bring to this position some knowledge of the state's school systems-- personnel, structure, and protocols--for this task. In addition, the preservice training program can provide descriptions of pilot states' experiences in establishing and maintaining contact with local agencies.

b. Communication within State Education Agency

Task Description. The Manager informs colleagues and supervisors

in the SEA of the program's goals and objectives, and of new

developments and services in the program. He develops a two-

way relationship between other project and the SEA staff so that

the latter becomes both users and resource people. He may be

called upon to present formal progress reports, but also maintains

regular informal communications with key personnel, e.g., in

curriculum areas and in Federal program areas, so that they are

well informed of the program and become its supporters and users.

Skills/Knowledge Requirements. The Manager may know SEA personnel

from prior experiences, or he may need to spend more time in

becoming acquainted with various staff members. He must then

rely essentially on social and communication skills, both of

which are entry characteristics for this position.

c. Project Publicity

Task Description. The Manager makes the necessary arrangements

for formal publicity of the project. He is responsible for the

preparation of news releases that announce the project as well

as later releases that cover major newsworthy developments. He

contacts newspapers, professional journals and other periodicals

for the placement of the releases. In addition, he may arrange

for the preparation and placement of a periodic "column" on

the project and its activities. Finally, he arranges for the

Preparation of other publicity materials, such as brochures, handouts, or audio-visual aids for use by Field Agents and other project staff.

Skills/Knowledge Requirements. Although the Manager may delegate the actual writing for this task to another staff member, ne must understand the types of audiences the various releases/and materials will have, so that they may carry the proper emphases. He must also know the types of publications to contact for the kind of exposure he wishes to give his project. Training should provide him with the benefit of the experience of other project managers in obtaining publicity through various means.

2. Interaction with Other Centers. The Manager maintains awareness of developments in other centers and in the field of educational information and knowledge utilization. He establishes regular communications with other Project Managers and represents the projects at conferences and meetings.

a. <u>Sharing of Information on Developments and Problems</u>

<u>Task Description.</u> He shares information with other Managers through informal communications and through the formal exchange of materials and reports. He seeks opinions of other Managers in resolving operational problems or in establishing evaluation criteria.

<u>Skills/Knowledge Requirements.</u> The preservice training session should provide the opportunity for Managers to meet one another and should assist them in establishing an informal communication system for continuing the exchange of information.

b. <u>Attendance at Meetings and Conferences</u>

<u>Task Description.</u> The Manager attends meetings or conferences with other center Managers so that he can formalize the interaction with other centers and maintain awareness of their activities, problems, and innovative services or procedures.

<u>Skills/Knowledge Requirements.</u> To fulfill this aspect of his role, the Manager must bring to the position a desire to develop professionally and a willingness to contribute to the general pool of knowledge that will evolve from experiences of the new centers.

C. DAILY PROJECT SUPERVISION

1. Search-related Activities. The Manager is capable of handling individual requests, but is primarily concerned with supervising the search activities and establishing a smooth and efficient operation in scheduling, searching, record-keeping, and using feedback from users for the improvement of the center's services.

a. Review and Assignment of Requests

Task Description. He reviews incoming requests and designates the types (e.g., manual and/or computer searches) and levels (e.g., in-depth or ready reference) of handling. In this review, he detects from the request forms those requests that require further negotiation, and ensures that either the Field Agent or the requester is contacted. In most cases, requests are handled on an as-received basis; when required, however, the Manager establishes a schedule for handling requests in order-- with expected dates for completion-- and prioritizes the requests if a requester's needs, or the position of the requester, warrants special attention. Requests are then assigned to staff members, taking into account the particular areas of subject-matter and reference-tool expertise that individual staff members may have.

Skills/Knowledge Requirements. The Manager must have a thorough understanding of search techniques, including the information necessary to perform a successful search, the types of search procedures (manual, batch, interactive), and the capabilities of the retrieval staff. He should know how to schedule requests and, when necessary, set priorities. Preservice training should

include an overview of the expected flow of search-related

activities, the general requirements of establishing search

schedules under different conditions (e.g., in staffing and/or

volume of requests), and examples of the types of requests the

project might receive.

b. Negotiation Requests

Task Description. The Manager may accept and negotiate direct

request (i.e., those that are received by telephone or letter

and not through a Field Agent). This task involves establishing

a clear definition of the requester's problems and completing

the requests form for use by the searcher.

Skills/Knowledge Requirements. This task requires the ability

to pinpoint the needs of the requester. The Manager should

receive preservice training in search negotiation and be shown

examples of requests that he may receive. It is important that

he be made aware of the types of questions that should be asked

routinely of users to help ensure useful search results.

c. Review of Search Formulations

Task Description. The development of search formulations is a

critical aspect of the search service, and the Manager is suf-

ficiently knowledgeable in this area to review the search

formulations of his staff. (In some centers, the Manager may

also participate directly in the formulation of searches.) This

review is particularly important in the start-up stages of

the project; thereafter, the review is only periodic and on a

spot-check basis.

Skills/Knowledge Requirements. The Manager should understand the procedures for formulating the kinds of searches used at his center (i.e., manual, batch, interactive). He should also be familiar and comfortable with the Thesaurus of ERIC Descriptors and with the other basic search tools. These skills should all be covered in the preservice training session.

d. Review of Search Outputs

Task Description. The Manager reviews search outputs, including those to be delivered to the requester by the Field Agent. Through this review he maintains awareness of his staff's performance in query negotiation and search formulation and of the degree to which requests are being met by the literature base available in the center. He may also screen the search results so that only those materials that he believes to be most relevant are included in the package to be delivered or mailed to the requester.

Skills/Knowledge Requirements. This task requires the ability to judge the relevance of search results to the user's stated needs. This ability will be developed primarily on the job with the benefit of user feedback. In the preservice training program, the Manager can be provded with examples of complete search records, so that he gains some knowledge of this screening and evaluation activity.

e. Establishes and Maintains the Feedback System

Task Description. The Manager develops forms and procedures for
soliciting indications of users' satisfaction with the
center's services. Forms may be sent out periodically from the
central office with the search results, and telephone or personal
contacts with users may be made. The Manager also encourages
regular reporting from the Field Agents regarding the kinds of
comments and suggestions that they are receiving from users
in the field.

Skills/Knowledge Requirements. The Manager should be aware of
the kinds of feedback systems that have been used by other centers,
including the kinds of forms that are used, and the successes and
limitations of the alternative ways of following up on users.
All of these concepts can be introduced during preservice training.

f. Review of Search Records

Task Description. The Manager periodically reviews search records,
particularly for indications of user satisfaction (as expressed
through repeat-users, comments, and statistics on use of the
center) and for assessment of schedule-related matters (e.g.,
turn-around times). This review is formalized in the preparation
of regular reports, but during the early stages of the project
this review receives special attention so that the Manager can
detect requirements for revising aspects of the operations or
refining the record-keeping system.

Skills/Knowledge Requirements. The Manager must know what
kinds of things to look for in his reviews. He should be
aware of the statistics of the search operations of other
centers so that he can gauge the progress of his own operations.
Preservice training should provide the Manager with a
framework of expectations and evaluation criteria based on
the pilot centers.

2. Acquisitions and Processing Activities. The Project Manager is
concerned with the development and organization of the center's local
collection and closely supervises the acquisitions and processing
activities. To fulfill this responsibility, he maintains awareness
of the kinds of educational materials that are available and
continually assesses the needs of users for special kinds of materials
that should be acquired. In this function, the Manager must
also relate needs to available budgetary resources.

a. Acquisitions Planning

Task Description. The Project Manager reviews all recommendations
for acquisitions of materials for the local collection. He sets
priorities based on user needs in relation to the budget. His
approval is required for all purchase requests.

Skills/Knowledge Requirements. The Project Manager must be
knowledgeable about educational materials currently available.
Preservice training should expose him to the educational source
lists, publishers, newsletters, etc., that he must consult to

maintain his awareness. He must have the ability to relate costs and needs in setting his priorities. This ability can be developed through preservice training in resource allocation on a cost-benefit ratio.

b. Identification of Local Materials

Task Description. Through liaison with LEA's and SEA's and other centers, the Project Manager identifies producers of curriculum materials, papers, and other local materials. He may initiate contact with these local producers to determine the appropriateness of the materials to the Center's collection.

Skills/Knowledge Requirements. The Manager should know where to look for local materials for his collection. In preservice training, the experience of project staff from the pilot centers can contribute suggestions for likely sources of local materials. In order to select the most appropriate materials, the Manager must be sensitive to the range and depth of information needed by the center's clients. His familiarity with the schools' needs will develop on the job through his monitoring of user needs.

c. Supervision of Processing

Task Description. The Project Manager supervises the cataloging and physical processing of new materials to ensure that they are organized consistently and efficiently for maximum usability

Skills/Knowledge Requirements. The Project Manager must understand the cataloging system and the processing procedures

used in the Center and must have a general knowledge of cataloging. Most of this knowledge can be introduced in preservice training. Knowledge of the systems and procedures used at a particular center would of course come from participation in the development of the systems and in on-the-job experience with those systems. The preservice training would provide an opportunity for discussion on the types of systems and procedures already in use, and their relative merits.

3. Field Agent-related Activities. The Manager establishes procedures for maintaining a regular flow of information between the Field Agent and the central office of the SEA. Through the establishment of this communication system, the Manager can supervise and provide support to the Field Agents and, equally important, help to ensure the sense of "team" effort in an essentially decentralized operation.

a. Supervision of Field Activities

Task Description. The Manager reviews regular reports (both informal and written) from Field Agents on routine operations, including travel schedules, contacts made and planned, kinds and numbers of requests, problems and success areas, and indications of user satisfaction.

Skills/Knowledge Requirements. The Manager should have a detailed understanding of the Field Agent's role. He should also be aware of alternative procedures for establishing workable communications systems, based on the experiences of the pilot state operations.

Preservice training should provide the basis for a thorough understanding of what is involved in the Field Agent role. This training should also include discussion of methods of communications used by the pilot states.

b. Communication Regarding Central Operations

Task Description. The Manager informs the Field Agent of central office operations--contacts, new developments, problem areas--so that the Field Agent understands the scope and constraints of the supporting organization.

Skills/Knowledge Requirements. The Manager must have an understanding of the kinds and degree of information that should be transmitted to the Field Agent, and the desirable frequencies for this exchange. The knowledge can be gained through preservice instruction on procedures used by the pilot state programs, in addition to on-the-job experience.

Trainable Skills/Knowledge
(Project Manager)

A. GENERAL MANAGEMENT

1. Administrative Decisions

- Knowledge of project needs and requirements of individual positions.

- Familiarity with project-related equipment.

- Ability to make project-level resource allocations.

2. Periodic Reporting

- Ability to write or supervise writing of project service reports.

- Ability to prepare progress reports.

- Ability to write major project reports.

3. Staff Development

- Understanding of overall project picture and ability to relate that picture to the establishment of a flow of activities and a delineation of staff organization.

- Ability to hold fruitful and constructive staff meetings.

- Awareness of technical and procedural developments pertinent to center operations.

- Ability to handle staff problems.

B. PROJECT REPRESENTATION

1. Liaison Activities

- Knowledge of channels for liaison between project and LEA's.

- Knowledge of how to publicize the project and its progress.

2. Interaction with other Centers

   ● Ability to communicate with other Project Managers

C. DAILY PROJECT MANAGEMENT

   1. Search-related Activities

      ● Thorough understanding of search techniques.

      ● Knowledge of how to accept and negotiate a search.

      ● Understanding of procedures for formulating searches.

      ● Ability to screen search results for relevance to user needs.

      ● Awareness of kinds of feedback systems used by other centers
        to followup on users.

      ● Knowledge of the kinds of things to expect in reviewing the
        search operations of the project.

   2. Acquisitions and Processing Activities

      ● Knowledge of educational materials currently availa)le.

      ● Knowledge of probable sources of local materials fo the
        project's in-house collection

      ● General knowledge of cataloging

   3. Field Agent - Related Activities

      ● Thorough understanding of Field Agent's role and methods of
        communicating with him, including types of information to
        transmit to him and types of information to expect from him.

PRINT RESOURCES SPECIALIST

The Print Resources Specialist is responsible for activities related to
developing, maintaining, and searching the Central Office's collection of
printed materials. The focus of the searching activities described below
is on ERIC-related tools, both for manual and on-line searching. Al-
though it is recognized that the Specialist will be concerned with
searching materials other than ERIC, this focus is established to emphasize
the utilization of a primary resource. Also, we assume that the specialist
will have had prio: training or experience in reference work and will
already be familiar with some of the more general sources of education
(e.g., Education Index) and education-related (e.g., Dissertation
Abstracts) materials.

For purposes of this analysis it was assumed that the Specialist
would be involved in both the manual and computer searching of ERIC.
Although the computer systems may be batch or on-line, and may be used
on-site or through a service center, the task analysis identifies require-
ments for the Specialist to have a general understanding of each kind
of searching procedure, but expertise in the type of system adopted by the
Central Office. Since several computer systems are available and trainees
may represent centers that have not selected a system, it will be
important to stress the principles and procedures of computer searching,
in general.

Task Analysis

(Print Resources Specialist)

A. ESTABLISHMENT AND MAINTENANCE OF COLLECTION

1. Selection Procedures. The Print Resources Specialist identifies
   and recommends the purchase of materials that will help the staff
   conduct searches and stay abreast of developments in educational
   research and in information retrieval systems and services. He
   also identifies materials that are too costly for any limited use
   projected by the center, and arranges for access of these materials
   through interlibrary loan or on-site use at a nearby library.

   a. Identification of Materials

      Task Description. During the start-up phase of the project, the
      Specialist works with the Project Manager in identifying a basic
      collection of reference tools and announcement materials (e.g.,
      RIE, CIJE, ERIC clearinghouse newsletters, GPO Monthly Catalog)
      that should be acquired by the center. He uses these tools to
      identify new materials that can be used by the staff in fulfilling
      search requests and/or in maintaining current awareness of
      developments in the fields of education and information retrieval
      and services. He works with the Manager and Human Resources
      Specialist in identifying printed materials from institutions
      and agencies with which they have established contacts (e.g.,
      Regional Laboratories, departments in the SEA).

Skills/Knowledge Requirements. The Specialist should be aware
of the major reference and announcement resources in education
and related fields, and have an understanding of the center's
needs and priorities for these materials. Although the
Specialist may have some knowledge of these materials upon
assuming his position, a preservice training program should
provide some guidance in identifying major resources and
providing evaluative information on their usefulness, as
perceived by the staff of currently operating centers.

b. Identification of Materials Held by Cooperating Libraries

Task Description. The Specialist follows through on all
contacts made initially by the Project Manager or other staff
members with librarians in state university, county, or
public libraries. He makes arrangements for interlibrary
loans, cooperative purchasing agreements, or joint staff
efforts in other areas (e.g., reference work). The Specialist
attempts to avoid unnecessary duplication of expenditures by
maintaining an awareness of the cooperating libraries'
collections and planned purchases. He maintains a file of their
holding (e.g., periodicals, reference materials) or establishes
procedures by which a center staff member from the center or
the library can quickly determine the availability of an item.

Skills/Knowledge Requirements. Specific details of cooperative
arrangements with libraries will vary from state to state, but

the preservice training program can help the Specialist
learn about the kinds of arrangements that have been established
by other centers. Such descriptions should include specific
information on the degree to which centers rely on these
libraries for the acquisition of different kinds of materials
(e.g., reference tools and the general education professional
literature).

c. Purchase of Materials

Task Description. The Specialist submits a list of recommended
purchases to the Project Manager on a schedule dictated by
local purchasing regulations. Complete bibliographic citations
are included so that the list can be used in the purchasing
process. In some cases, the Specialist may be asked to
prioritize the list or to group items according to the center's
different needs. Subscriptions are reviewed annually and
recommendations for renewal are made on the basis of their
general usefulness and frequency of use in relation to cost.

Skills/Knowledge Requirements. Procedures for purchasing,
accounting, and record-keeping will be determined by local
practices and will be learned on the job.

2. Organization Procedures. The Specialist establishes filing and
cataloging procedures and instructs clerks in their use. He
supervises the physical processing of materials so that they are
readily accessible to staff members on shelves or from files.

a. Establishment and Maintenance of Filing and Cataloging Procedures

Task Description. The Specialist develops a system for cataloging

and filing materials in the local collection, including fugitive

materials, published literature, and ERIC microfiche. He

decides on the depth or detail of descriptive cataloging that

will be done, and how materials other than ERIC documents will

be accessed, e.g., by Sears or Library of Congress subject head-

ings, or by ERIC descriptors. He works with the Project

Manager in identifying the needs of the center staff and

projecting the use of the center's materials by on-site users

to determine the requirements for cataloging and classifying

materials. He documents the procedures to be used by the

clerical staff in assisting him prepare incoming materials

for use by the staff.

Skills/Knowledge Requirements. The Specialist will most likely

be familiar with traditional library procedures in preparing

a collection for use. However, a preservice training program

can help the specialist relate traditional library practices to

the unique requirements of a center with selected materials (e.g.,

curriculum guides, ERIC microfiche) and inform him of current

practices in other centers.

b. Development of Procedures for Physical Processing and Shelving

Task Description. The Specialist develops procedures for

identifying a document at a level of detail required for

internal use. He establishes the classification scheme to be used and trains the clerical staff in the filing and shelving arrangements so that new materials can be correctly placed upon completion of cataloging and processing.

Skills/Knowledge Requirements. The Specialist should have previous experience or training in these traditional library practices.

B. PERFORMANCE OF SEARCH-RELATED ACTIVITIES

1. Handling of Direct Requests to Central Office. The Print Resources Specialist receives requests that are made directly to the Central Office by telephone, letter, or personal vists. The Specialist discusses search problems with clients to clarify and interpret their information requirements. He prepares a summary statement of each request for use in developing search strategies.

a. Query Negotiation

Task Description. The Specialist may assist the Project Manager in handling requests that are received directly by the Office, and not through the Field Agent. For requests that are received by letter, the Specialist may initiate telephone contacts to ensure that the clients' information requirements are clearly understood. In interviews with the clients, the Specialist poses questions and guides discussions with questions that are intended to elicit specific elements of the clients' problems (e.g., how the information is to be used and the level, age, or ability group in which the client is interested). He paraphrases the

discussion in his own words, or in descriptor-terminology, to test his understanding of the problem with the client. If appropriate, he may refer the requester to the Human Resources Specialist for information about projects and people whom he may contact for more information or consultant services.

Skills/Knowledge Requirements. The Specialist must be skilled in interpersonal relations and communications, and should have an understanding of the kinds of questions that can be posed for eliciting specific information from clients. The preservice training program should provide the specialist with experience in conducting interviews and in analyzing the interview process for developing a checklist of significant interpersonal and question-related items.

b. Preparation of Summary Statements

Task Description. The Specialist completes a standard search request form, identifying the client and stating the nature of the problem in narrative form. He may recommend specific ERIC descriptors at the time, but, at a minimum, he identifies the key concepts that will need to be considered in formulating the search.

Skills/Knowledge Requirements. This task requires the ability to synthesize a discussion into a narrative description of a problem, emphasizing the key concepts of the problem and the relation between these concepts (e.g., is the client interested

in either one idea or another, or is he interested in two ideas discussed together in a cause-effect or differences context.) The Specialist should be given some preservice training in preparing summary statements after an interview session, and be introduced to the various kinds of request forms that are used in currently operating centers.

2. Performance of Preliminary Activities. The Project Manager may delegate responsibility to the Specialist for reviewing search request forms prior to their assignment to a staff member for handling. In his review, the Specialist checks for the completeness and clarity of requests received both directly by the office and through a Field Agent. He checks the files of previous searches to identify any relevant search formulations or results.

   a. Review of Request Forms

      Task Description. The Specialist reviews incoming requests and designates the types (e.g., manual and/or computer searches) and levels (e.g., in-depth or ready reference) of handling. In this review, he detects from the request forms those that require further negotation, and ensures that either the Field Agent or requester is contacted. The Specialist may also be requested to assist the Manager in scheduling requests and establishing expected dates of completion.

Skills/Knowledge Requirements. The Specialist must have a thorough understanding of search procedures, particularly for this task, in the requirements for stating a problem so that it can be meaningfully translated into search formulations. He must also be familiar with the contents of the center's local collection (e.g., fugitive literature file, curriculum guide collection, reference materials) and ERIC file, so that he can judge the kind of search that is most appropriate for each request.

b. Review of Previous Searches

Task Description. Prior to initiating a search, the Specialist checks the file of previous searches to determine the suitability of any earlier search formulations or search results. In some cases, requests may be fairly similar and the Specialist may recommend that they be repeated; in other cases, the Specialist may recommend modifications.

Skills/Knowledge Requirements. The usefulness of this review step is, in large part, dependent on the useability and accessibility of previous search records. In preservice training, the Specialist should be introduced to the various formats and filing procedures used by other centers.

3. Analysis of Problem Statements. For requests that require manual or computer searches of the ERIC system, the Specialist analyzes

problem statements to identify major concepts that must be
translated into ERIC descriptors. He selects search terms from the
Thesaurus for subject searches and formulates search procedures
or statements.

a. Identification of Major Concepts

    Task Description. For subject searches, the Specialist studies
    summary statements of clients' information requirements and
    identifies key concepts that must be considered in the search.
    He also notes any other access points (e.g., authors, institu-
    tions, publication dates) suggested by the clients. He groups
    these concepts into categories (e.g., subjects, age or levels,
    ability) as a preliminary step toward establishing the search
    logic.

    Skills/Knowledge Requirements. The ability to recognize and
    isolate search-related concepts will be developed with experience,
    but the preservice training program should provide the trainee
    with experience in working with narrative statements in which
    concepts of several different kinds are illustrated.

b. Selection of Descriptors

    Task Description. The Specialist uses the Thesaurus of ERIC
    Descriptors as a tool in translating major concepts into
    preferred or authoritative terms (descriptors) of the ERIC
    system. He explores alternative approaches to the

Thesaurus main descriptor entries, and traces main entries to
broader, narrower, and related terms to identify potentially
useful terms. For computer searches, he also selects groups
of descriptors relative to a concept that should be negated in
a search. If in doubt about the context or scope of a descriptor,
he may scan a printed copy of RIE to become familiar with the
ways in which the term is used. In other cases, he may seek
the assistance of other staff members, or subject specialists
in the SEA, to gain a better understanding of either the
concepts or Thesaurus terms.

Skills/Knowledge Requirements. The Specialist must understand
how the Thesaurus was developed, how it is structured, and how
the clearinghouses are instructed to use the Thesaurus in
indexing documents. He must develop proficiency in using the
Thesaurus, learning how to judge the meaning of descriptors
from their relation to broader or narrower Thesaurus terms and
determining the relevance of ERIC descriptors to the major
concepts of searches. A preservice training program should
instruct the Specialist in indexing practices of ERIC, in
the use of the Thesaurus, and in the importance of combining
several terms to represent a single concept. He should be
introduced to supplementary searching aids (e.g., ERIC
Identifiers; the Source Directory; ERIC Descriptors) and instructed

on their use. He should also learn how he can seek in-
service help from the ERIC system personnel in gaining a
more complete understanding of indexing practices or meanings
of terms.

c. Preparation of Search Logic

Task Description. The Specialist prepares a statement of the
search logic, suiting it in form and complexity to the kind
of search that is to be performed. For manual searches, the
Specialist may simply identify several descriptors to be used
by clerical or paraprofessional staff in their searching, or he
may note some coordinate terms that should be used in reviewing
ing resumes. For computer searches, the Specialist formulates
the Boolean search statements, indicating the terms to be
coordinated by OR, AND, or AND NOT. For on-line searches, he
outlines the sequence to be used in entering search statements,
and notes possible alternatives if the interaction results in
an unfruitful yield.

Skills/Knowledge Requirements. The Specialist must have a
general understanding of the retrieval principles underlying
each of the searching methods (e.g., manual, batch, and on-line).
He should be particularly knowledgeable in Boolean logic, and
be skilled in applying this logic to represent the information
requirements in search statement or series of statements. He
must be able to anticipate likely search results (e.g., too

many or too few hits), and to apply different strategies
(e.g., broadening a search by ORring terms) to handle
these problems. The Specialist should be instructed in each
of these areas, and be given experience in developing search
strategies.

4. Conduct of Searches. The Specialist either performs searches or
delegates this responsibility to other staff members. If a
delegated task, the Specialist supervises the searching by checking
worksheets and printouts.

a. Performance of Manual Searches

Task Description. The Specialist (if performing this task)
works with the index volumes and recent issues of RIE, CIJE,
PACESETTERS, etc., for the appropriate years, and notes the
accession numbers (e.g., ED or EJ numbers) under the
descriptors indicated on the search form. From the index
sections, the Specialist then proceeds to the resume section
and reads the descriptor string and abstract, noting the
co-occurence of descriptors or concepts that are particularly
relevant to the search problem. The relevant abstracts are
photocopied, and, for journal articles, either the citation
or the original articles are also photocopied.

Skills/Knowledge Requirements. The Specialist must understand
the organization and formats of various sections (e.g., Resume,
Index) in each ERIC publication, and know the procedures for
tracing through from the index into the major entry sections.
He must be able to judge the relevance of materials to the
clients' search problems by reading the descriptor string
and the abstract. Although Specialists may be familiar with
the printed ERIC products and manual searching procedures, the
preservice training program should provide illustrations from
currently operating center of procedures used ·
in assigning manual searching to paraprofessionals or clerks
and maintaining quality control over the selection of relevant
abstracts.

b. Performance of Computer Searches

Task Description. The Specialist either performs the searches
or delegates responsibility for their conduct. For batch
searching, the Specialist ensures that the requests are
properly formatted and coded for input, and acts as liaison with
computer-center personnel. For on-line searching, he applies
the search formulations at the terminal and uses the inter-
active capability to modify his strategy on-line. He ensures
that the procedures for receiving printouts are outlined,
documented, and followed on schedule.

Skills/Knowledge Requirements. The Specialist must understand
the searching procedures of the system (e.g., QUERY, DIALOG,
SDC/ERIC) adopted by the Central Office, and be able to use
these systems efficiently and effectively. Expertise in this
area must be developed on the job through interaction with
the system developers, study of the system documentation, and
contact with other users. A preservice training program should
introduce the Specialist to the various systems and searching
procedures that are available. For Specialists from centers
that have already selected a system, the training program should
provide more detailed descriptions of operating procedures and
hints for trouble-shooting when problems arise.

5. Review and Packaging of Search Results. The Specialist reviews
search results and notes particularly relevant references for the
Field Agent or client. He decides on the most appropriate packaging
of the materials (e.g., photocopies of selected articles; photocopies
of resumes) and selects additional enclosures (e.g., instructions
on how to order documents in hard copy or microfiche). He prepares
a cover letter to the client and notes the enclosure of an evalu-
ation form for use by the client in expressing his satisfaction
with the search results. He completes documentation on the request,
noting particularly any search experiences that would be useful in
future searches.

a. Review of Search Results.

Task Description. The Specialist reviews the output of manual

or computer searches, either screening apparent irrelevant

materials or highlighting those that are seemingly on-target.

If the search has not yielded particularly useful items, the

Specialist notes for the Field Agent or client the possible

reasons and indicates the kinds of information that would be

useful in conducting a more fruitful search.

Skills/Knowledge Requirements. This task requires the ability

to assess the relevance of materials to the clients' informa-

tion requirements. The Specialist should be provided criteria

for making these judgments and given experience in applying

them. The preservice training program should also introduce

the Specialist to the strengths and weaknesses in the coverage

of different areas in the ERIC data base.

b. Packaging of Responses

Task Description.   The Specialist identifies the materials to

be included in the client's package and decides on the formats

of these materials. He instructs the secretaries on which items

are to be xeroxed and which information sheets are to be

included (e.g., instructions on ordering hard copy or microfiche).

He prepares a cover letter or note for each package.

Skills/Knowledge Requirements. The Specialist should be familiar with various formats and packaging procedures used by other centers. Form letters, standard enclosures (e.g., explanations of bibliographic elements) from other centers should be made available for review and evaluation.

c. Documentation and Filing.

Task Description. The Specialist completes documentation on requests, noting particularly any procedural information on searching that might be useful in the conduct of future searches (e.g., postings for a combination of terms; successful or problem descriptors or combinations of terms; clarification of scope notes for descriptors). He instructs the secretary on filing the records for easy reference in future searches.

Skills/Knowledge Requirements. The Specialist will develop worksheets and recording procedures for documenting searches through experience on the job. The preservice training program should introduce the Specialist to filing procedures and forms used by retrieval specialists in other centers.

Trainable Skills/Knowledge

(Print Resources Specialist)

A. ESTABLISHMENT AND MAINTENANCE OF COLLECTION

1. Selection Procedures

   ● Awareness of the major reference and announcement resources
     in education and related fields.

   ● Understanding of the kinds of cooperating arrangements that
     have been established between currently operating centers and
     state, county, or university libraries.

2. Organization Procedures

   ● Ability to relate traditional library practices in cataloging
     and indexing to the requirements of his center.

   ● Awareness of cataloging and indexing procedures used by other
     centers.

B. PERFORMANCE OF SEARCH-RELATED ACTIVITIES

1. Handling of Direct Requests to Central Office.

   ● Understanding of the kinds of questions that can be posed to
     clients for eliciting specific information.

   ● Ability to conduct interviews and clarify clients' information
     requirements..

   ● Ability to synthesize a discussion with a client into a
     narrative description of a problem, emphasizing key concepts
     of the problem and the relation between concepts.

   ● Awareness of the various kinds of request forms used in currently
     operating centers.

2. Performance of Preliminary Search Activities

   ● Ability to review search statements for their completeness and
     clarity before they are translated into search statements.

   ● Ability to maintain files of previous searches so that they
     can be easily accessed for review in future searches.

3. Analysis of Problem Statements

- Ability to recognize and isolate search-related concepts in problem statements.

- Understanding of how the ERIC Thesaurus was developed and how it is structured.

- Understanding of ERIC indexing practices.

- Ability to use the Thesaurus, knowing how to judge the meaning of descriptors from their relation to broader or narrower terms and determine the relevance of ERIC descriptors to major concepts of searches.

- Ability to use supplementary searching aids (e.g., ERIC Identifiers; the Source Directory; ERIC Descriptors).

- Awareness of how to seek help from ERIC system personnel for inservice training in developing a more complete understanding of ERIC indexing practices and meanings of terms.

- Understanding of retrieval principles underlying each searching method, e.g., manual, batch, and on-line.

- Knowledge of Boolean logic and ability to apply this logic in preparing search statements.

- Ability to anticipate likely search results (e.g., too many or too few hits), and to apply different strategies (e.g., broadening a search by ORring terms) to handle these problems.

4. Conduct of Searches

- Understanding of the organization and formats of various sections (e.g., resume, index) in each ERIC publication.

- Ability to conduct a manual search by tracing through from the index sections into the major entry sections.

- Ability to make a preliminary judgment on the relevance of materials to the clients' search problems by reading descriptor strings and abstracts.

- Knowledge of other centers' procedures in assigning manual searches to paraprofessionals or clerks.

- Ability to use the system adopted by the Central Office efficiently and effectively.

5. <u>Review and Packaging of Search Results</u>

- Knowledge of the strengths and weakness in the coverage of different subject areas by the ERIC data base.

- Ability to make a final judgment on the relevance of materials to the clients' information requirements.

- Familiarity with various formats and packaging procedures used by other currently operating centers.

- Familiarity with filing procedures and forms used by other centers in documenting search procedures and maintaining files for future use.

HUMAN RESOURCES SPECIALIST

The Human Resources Specialist's primary responsibility is to act as an intermediary between clients and educational experts or exemplary sites of educational innovation. The nature of the role of Human Resources Specialist makes entry skills and experience in education very important and desirable. In start-up operations, the establishment of resource files will be greatly aided by familiarity with the SEA and educational experts and programs in the state.

In some states, the roles of Human Resources Specialist and Field Agent may overlap, or the Field Agents may assume the tasks of the Human Resources Specialist. Some of the tasks of this role may, in other states, be performed by the Print Resources Specialist or the Project Manager. The existence of the role as a separate position however, allows for a greater amount of time and effort to be spent on expanding and updating the resources of the project.

Task Analysis

(Human Resources Specialist)

A. DEVELOPMENT AND MAINTENANCE OF HUMAN RESOURCES FILE

1. Identification of Reference Sources.

Task Description. The Human Resources Specialist (HRS) uses a variety of reference sources to insure that he has up-to-date knowledge of consultants and other specialists with expertise in specific educational fields. These reference sources may include professional journals, membership lists of previously used consultants, and the personal knowledge of SEA specialists, Field Agents, Title I and Title II program coordinators, etc.

Skills/Knowledge Requirements. The HRS must be familiar with many different sources of information that may help him identify knowledgable human resources. If the HRS himself was formerly an educational practitioner or consultant in the state, or is recruited from another position in the SEA, he may already know quite a few specialists and consultants. Preservice training for the HRS can include a listing and description of educational and professional publications that are most likely to include useful references to knowledgeable resource persons. This training can also include suggestions about further reference sources such as Field Agents and SEA specialists.

2. <u>Determination of Availability of Human Resources</u>

<u>Task Description</u>. By mail, telephone, or other means, the HRS
contacts potential resource persons in or near the state to
determine their availability for giving assistance to schools. He
attempts to learn the conditions under which they might be able to
assist, e.g., the times of day and month when the consultants
might have free time, their willingness and ability to travel
to school sites, their conditions of reinbursement, etc.

<u>Skills/Knowledge Requirements</u>. No special skills or knowledge are
required here, other than knowledge of procedures and information
sources for learning the addresses and/or telephone numbers of
potential resource persons whom the HRS might wish to contact.
Preservice training could provide the HRS with several alternative
approaches to obtaining such information.

3. <u>Filing of Human Resource Data</u>

<u>Task Description</u>. The HRS establishes and maintains a filing
system of data on human resources, indexed by topics of information
need so that he can quickly obtain data on the most relevant
experts when he receives requests from the districts. Data recorded
for each potential consultant should include the conditions of

the consultant's availability, his full mailing address and
telephone number, etc. This file should be updated at regular
intervals as resource persons enter or leave the state, and as
new areas of expertise evolve in the field of education.

Skills/Knowledge Requirements. The only requirement for the HRS
not previously stated is a knowledge of one or more classification
systems for cataloging or indexing areas of educational expertise.
Preferably, the HRS will use a classification system similar to
that used by the Field Agent in categorizing the information
requests received from the school districts. Thus the HRS as well
as the Field Agent should receive preservice instruction regarding
possible methods of conceptually organizing different fields of
educational theory and practice.

B. LINKAGE ROLE BETWEEN CONSULTANTS AND SCHOOLS

Although the Field Agent has the primary linkage role, the HRS also
serves this role on certain occasions, either directly or through
a Field Agent, when the schools' information needs can best be met
through the services of a consultant.

1. Observance of District Protocols

Task Description. The HRS obtains information about, and
subsequently adheres to, protocols established by the client districts
regarding use of consultants. These protocols might include, for

example, the specified channels for communication between district personnel and consultants, rules about the consultants' use of district facilities, etc.

Skills/Knowledge Requirements. It is anticipated that the entry skills of the HRS will include some first-hand familiarity with the general organization and operations of typical school districts. Such a background, augmented by a brief "refresher course" on school organization as part of the preservice training, should provide the information he will need to contact the districts and to obtain relevant data on district protocols.

2. Matching Expertise to Client Needs

Task Description. When the HRS receives a client request, he uses the human resources filing system to locate information on resource persons with expertise in the particular area(s) of concern to the client. In addition, he takes into account the consultants' geographic proximity to the client and other conditions of the consultants' availability.

Skills/Knowledge Requirements. The major skill required here is facility in using the filing system to match consultants with information needs. This facility can be best gained through on-th-job experience, although some initial familiarity might be gained in preservice training by having the HRS create a hypothetical human resources file and then use that file in response to simulated client requests.

3. Querying of Consultants

Task Description. In some situations a client's question may be sufficiently limited and specific so that it can be answered by a consultant without the need for a face to-face client-consultant meeting. In such instances, the HRS may contact the consultant directly to obtain the desired information, and then will relay the information to the client.

Skills/Knowledge Requirements. The HRS must be able to understand the clients' information needs sufficiently well to judge whether they can be met by straightforward factual information transmitted by telephone or mail, or whether those information needs are more complex and diffused, requiring in-depth face-to-face discussions between clients and consultants. This judgment by the HRS will be based primarily on the request form submitted to the central office by the Field Agent, though in some cases the HRS may have follow-up telephone conversations with the clients to clarify specific points. Skill in determining the optimal procedures for dealing with each client query will be developed by the HRS largely through on-the-job experience. In addition, preservice training can include a discussion of relevant factors in making such determinations, and may include practice in developing query-handling procedures, using simulated client requests.

4. Arrangement of Client-Consultant Meetings

Task Description. When a client's request cannot be met by
straightforward factual information relayed by the HRS from
consultant to client, the HRS arranges to bring the client and
the consultant together for more intensive discussions. He first
contacts the consultant to explain the nature of the client's
problem and to determine the consultant's interest and availability
to work with the client's district in solving the problem. He
then works with the Field Agent with responsibility for the
district concerned to organize one or more small meetings designated
to bring the consultant in face-to-face contact with key district
personnel. The HRS may participate directly in the initial
meetings in a turnkey role, but more probably this active
coordination role will be assumed by the Field Agent.

Skills/Knowledge Requirements. The primary skill required for
this task is knowledge of and ability to follow district protocols
in bringing schools together with consultants. The maintenance
of information files regarding such protocols is discussed above
(Section Bl, Observance of District Protocols).

C. LINKAGE BETWEEN CLIENTS AND EXEMPLARY SITES

1. Identification of Exemplary Sites

Task Description. The HRS uses a variety of reference sources
to maintain up-to-date knowledge of sites in or near the state

where innovative programs are being implemented and/or where certain components of the districts' operations are unusually well managed and executed. These reference sources may include professional journals, state and regional records, data related to Title I and Title III programs, and the personal knowledge of SEA specialists, Field Agents, and coordinators of federal programs.

Skills/Knowledge Requirements. The HRS should be familiar with potential sources of information about exemplary sites. If he has been an educational practitioner or consultant in the state, or is recruited from another SEA position, he may already know of numerous sites of particular interest. Preservice training for the HRS can include a listing and description of publications that may include further information on such sites.

2. Filing of Exemplary-Sites Data

Task Description. The HRS establishes and maintains a file of exemplary sites, arranged by the type of innovation each represents. The file includes such information as the times and circumstances for site visits, the arrangements that should be made, and the names of persons to be contacted at the site. The site file is updated regularly to reflect new sites and sites that have ceased operations.

Skills/Knowledge Requirements. The HRS should understand the types of educational innovation represented by exemplary sites in his file and should be able to categorize them systematically for easy reference. The HRS should be given preservice instruction in the setting up and maintaining of an exemplary-sites file, including an introduction to some types of systems he may use.

3. Matching Exemplary Sites to Client Requests

Task Description. When the HRS receives a request for which a site visit seems appropriate, he selects the site(s) most suited to the request in terms of type of innovation and geographic location. He then refers the client to the site(s), providing him with the necessary information to arrange for a site visit.

Skills/Knowledge Requirements. For this task, the HRS must be able to match client requests with exemplary sites in his file. He should be able to interpret requests in terms of his categories of innovation. Although preservice training can provide practice in matching simulated requests and sites, expertise in this task will be developed on the job.

D. FEEDBACK AND COMMUNICATION

1. Filing of Clients' Comments

Task Description. The HRS establishes and maintains a file of client comments on the usefulness of consultant and exemplary site referrals. The HRS establishes a standardized procedure to follow-up referrals. He uses the data in his client comment file to help him in matching clients to consultants or sites and to give himself a better picture of the consultants or sites.

Skills/Knowledge Requirements. In establishing his own follow-up procedures, the HRS should be aware of possible ways in which follow-up may be carried out (e.g., by phone, postcard, Field Agent). He should also know how to interpret and use client comments to increase the usefulness of his referrals. Pre-service training can include an introduction to the kinds of follow-up that yield the greatest returns. Interpretation and use of comments are skills that will be developed primarily on the job.

2. Communication with Field Agents

Task Description. It is the responsibility of the HRS to keep the Field Agents informed of experts and exemplary sites in their areas so that the Field Agents can maintain an up-to-date local file of these resources.

Skills/Knowledge Requirements. The HRS should know the geographic areas covered by the Field Agents and the geographic locations of the experts and sites. He should also be able to describe briefly the experts or sites to the Field Agents. This knowledge and ability should be acquired on the job.

Trainable Skills/Knowledge

(Human Resources Specialist)

A. DEVELOPMENT AND MAINTENANCE OF HUMAN RESOURCES FILE

1. Identification of Reference Sources
   ● Familiarity with reference sources such as education and
   professional publications.

2. Determination of Availability of Human Resources
   ● Knowledge of procedures and information sources for learning
   methods of contact for potential resource persons.

3. Filing of Human Resource Data
   ● Knowledge of one or more classification systems for cataloging
   or indexing areas of educational expertise.

B. LINKAGE ROLE BETWEEN CONSULTANTS AND SCHOOLS

1. Observance of District Protocols
   ● Knowledge or general organization and operations of typical
   school districts.

2. Matching Expertise to Client Needs
   ● Facility in the use of the human resources filing system
   in matching consultants to information needs.

3. Querying of Consultants
   ● Skill in determining the optimal procedures for dealing
   with each client query.

C.   LINKAGE BETWEEN CLIENTS AND EXEMPLARY SITES

1.   Identification of Exemplary Sites
   ● Familiarity with potential sources of information on
     exemplary sites, such as publications.

2.   Filing of Exemplary Sites Data
   ● Understanding of the types of educational innovation
     represented by each of the exemplary sites and
     ability to categorize them.

3.   Matching Exemplary Sites to Client Requests
   ● Ability to interpret client requests in terms of
     his categories of innovative sites.

D.   FEEDBACK AND COMMUNICATION

1.   Filing of Clients' Comments
   ● Awareness of various types of followup procedures for the
     solicitation of client feedback.

FIELD AGENT

The primary role of the Field Agent is to provide linkage between information
sources (especially the retrieval personnel of the state's educational exten-
sion program) and information users (i.e., district personnel). Within this
general framework, however, wide variations can be expected in the methods
used by different Field Agents to perform this linkage role. These variations
will reflect differences in state organizations and policies, differences in
the personal styles of individual Agents, and differences in the geographic
areas and the clientele served by these Agents.

Possibly the most important type of role variation will be in the degree of
self-initiative taken by different Agents in attempting to promote educational
change. Some Field Agents will seek to actively influence the districts'
practices, while others will tend to restrict their activities to providing
information needed and requested by the districts. The task analysis presented
below allows for some inter-Agent differences in degree of active promoting of
educational change; however, no attempt is made to encompass the most extreme
interventionist approaches (e.g., working intensively with a district to
implement new procedures) since it is felt that such approaches will be beyond
the capabilities of most or all centers.

Another important factor contributing to variations in the scope and level of
Agent involvement with the districts will be the size of the geographic area
covered by that Agent. In some states an Agent may have responsibility for a
large area, and may thus be able to give only superficial services to any given
client. In other states, an Agent may cover a smaller area and have more time
to concentrate on each client.

Task Analysis
(Field Agent)

A. LINKAGE ROLE

1. Publicity Activities. The Field Agent works through the protocol of
the school system to develop contacts with key personnel in the
districts and to create awareness of the services throughout the
district. In establishing these initial contacts, the Field Agent
is both developing personal support for his role and informing people
about the program. This activity is a continuous one, not simply
a one-time effort.

   a. Establishment and Maintenance of Key Contacts

   Task Description. The Field Agent follows through on and develops
   contacts in the school district that are originally initiated by
   the Project Director or Manager to develop support for the service.
   He describes his role clearly so that conflicts with other district
   personnel can be avoided, and seeks assistance and advice in
   creating awareness of the program throughout the schools.

   Skills/Knowledge Requirements. The personality of the Field Agent
   and his communications skills will contribute in large measure to
   the execution of this task. A preservice training program can
   assist the Field Agent in developing a philosophy and framework
   for thinking about his role, and can provide direct experience
   in articulacing these thoughts to others.

   b. Promotion of Services with School Personnel

   Task Description. The Field Agent develops and follows a strategy
   for creating awareness among school personnel of the service's
   objectives and procedures for using the service. He conducts formal
   presentations to groups (e.g., faculty meetings) using handouts or
   presentation-support materials prepared by the Central Office. He
   also develops more individual contacts by engaging in conversations
   with personnel during planning periods and informal and small
   committee meetings.

Skills/Knowledge Requirements. The Field Agent must be familiar
with the structure and organization of typical school systems.
This knowledge should include an awareness of the general roles
and interactions of different types of school personnel, e.g.,
principals, curriculum supervisors, etc. He should also
be sensitive to the channels by which decisions and information
are often communicated within school systems, and between
school systems and external agencies such as those represented
by the Field Agents. From this base of knowledge, the Field
Agent then develops a strategy to promote the services in a
systematic and effective way. Although some Field Agents will
bring this knowledge to their new position, others will need
to acquire it, with help from state agency personnel who are
familiar with the district and from individuals within the
system who are able and willing to help in this kind of analysis.

The preservice training program can help the Field Agent develop
a general overview of typical organizational patterns and some
barriers to innovation, but the application of the information
into his specific situation will be done primarily on the job.
More specific guidance can be transmitted in a preservice
training program by helping the Field Agent plan and rehearse
the kinds of presentations--both formal and informal--that will
be required.

2. Identification of Client's Information Requirements. When a request
for assistance is received, either formally or during the course of
an informal discussion, the Field Agent conducts an interview with
the client to identify his information requirements. During the
course of their conversation, the Field Agent attempts to help the
client diagnose the underlying problem and causes, and translate these
problems into concrete information requirements.

a. Diagnosing the Problem

Task Description. The Field Agent listens carefully to the
client's expression of concerns and directs the conversation,
through careful and thoughtful questioning, in a diagnosis of
the underlying elements of the problem. He learns to distin-
guish the well-thought-out and specific problem statements
from the general or superficial ones. His questions lead to a
discussion of the client's attitudes, his perceptions of the
causes of the problem, and any difficulties he has previously
encountered in correcting or solving the problem.

Skills/Knowledge Requirements. The Field Agent's ability to
relate to others and create a comfortable, non-threatening
environment for the interview will be particularly important
in this task. A preservice training program should help
the Field Agent begin to recognize differing qualities in
problem statements and should provide him with examples of
the kinds of questions that should be asked to elicit more
specific information from clients. The session should also
provide him with some actual experience in conducting inter-
views, with situations derived from the experiences of other
Field Agents.

b. Translating Problems to Information Requirements

Task Description. The Field Agent leads the interview into a
problem-solving discussion, so that they can begin to identify
the kinds of information, e.g., relevant research reports, a
consultant, or descriptions of other projects, that would be
useful in studying alternative solutions. As appropriate, the
Field Agent also helps the client relate his information
requirements to the terminology and concepts of relevant
educational developments or innovations (e.g., flexible
scheduling, open classrooms) so that the client has the
opportunity to determine their appropriateness to his
perceived problem.

Skills/Knowledge Requirements. The preservice training session should help the Field Agent gain some awareness of major educational developments and of the knowledge base in education. He should be provided with some guidance in how to develop this knowledge on the job. The preservice training should include some experience in the translation part of interviewing a client, with the use of situations that represent the more typical kinds of problems that Field Agents have been handling.

3. Identification and Selection of Information for Clients. The Field Agent follows through on the interview to ensure that the client receives appropriate materials or names of projects and people. He (1) prepares a summary statement of the interview, (2) sends it to the Central Office for a search or uses it in conducting a local search, and (3) reviews the search results before delivering them to the client.

    a. Preparation of Summary Statement

        Task Description. The Field Agent completes a search request form to identify the client and the nature of the problems to be searched. He may recommend specific ERIC descriptors, but in any event, identifies the key concepts that must be incorporated into the search. He also notes any additional information (e.g., age range, level, type of materials) that should be incorporated into the search statement or considered in the screening process.

        Skills/Knowledge Requirements. The record of the negotiation phase is the key interface between the client and the searcher and represents an important element in the flow of activities from the field to the central office. The Field Agent should be given some preservice experience in recording interviews on special forms, that are, in turn, reviewed by the Retrieval Specialist for their adequacy for actually conducting a search. This exchange should then become a continuing part of the inservice training of the Field Agent.

b. Conduct of Local Searches

Task Description. Although many search requests will be
transmitted directly to the Central Office, the Field Agent
may conduct some local searches. Local searches may involve
the identification of materials on hand or the name of a local
consultant, but they may also involve a manual search of recent
RIEs and CIJEs. In this latter case, the Field Agent develops
the search strategy and performance of the search by the
Secretary.

Skills/Knowledge Requirements. The Field Agent should be aware
of the resources in his own collection so that he can draw upon
it for fulfilling some searches. In cases where he assesses the
need for a local manual search (e.g., for fast turn-around time
or for a tentative inspection of the literature), he should be
able to select descriptors and to have trained his Secretary in
conducting the search. In preservice training, the Field Agent
should gain some experience in using the Thesaurus of ERIC
Descriptors, and learn about the conduct of manual searches.

c. Review of Search Results

Task Description. The Field Agent reviews results of all searches.
He may actually screen out the less relevant materials, or he may
simply note for the clients those items he believes are most
relevant. Over a period of time, particularly through repeat
request, he may become familiar enough with some materials to
make notes on the abstracts that are more evaluative in nature.

Skills/Knowledge Requirements. This task requires the ability to
assess the relevance of materials to clients' needs. The pre-
service training program should provide some initial experience
in working with sample searches and results. The further develop-
ment of expertise in this area will require the Field Agent's
continued efforts in staying abreast of educational trends and
developments of the literature (e.g., major authors and their
works), and of the value of projects and people to whom previous
clients have been referred.

4. <u>Delivery of Search Results and Development of Future Plans</u>. The Field
   Agent personally delivers the search results and discusses them with
   the client. He plans with the client any future contacts, and attempts
   to assess the benefits to be gained by his planning for a more active
   role in the information-utilization stage.

   a. <u>Delivery and Discussion of Search Results</u>.

      <u>Task Description</u>. The Field Agent personally delivers the search
      results to the client and (1) explains the bibliographic parts of
      the results,((2) includes how the client might order specific
      documents or acquire microfiche, and (3) focuses his attention on
      those materials (e.g., abstracts) that appear particularly useful
      in showing alternative solutions. He is sensitive to the different
      levels of information-use sophistication in his clients so that he
      can judge how much explanation is desirable or needed.

      <u>Skills/Knowledge Requirements</u>. The Field Agent must be able to
      explain the different bibliographic elements of the package
      (e.g., of an ERIC resume) and, to describe the ordering procedures
      for obtaining copies of documents or articles. The preservice
      training program should help him gain experience in interpreting
      and explaining different types of packages (e.g., ERIC resumes,
      PREP reports). The ordering procedures (e.g., for microfiche,
      hard copy) will vary from state to state, but the Field Agent
      (and Manager) should become acquainted with the procedures used
      in the pilot states and other educational information centers.
      The Field Agent should also be given initial experience in
      discussing materials and encouraging clients to read them.

   b. <u>Development of Plans for Future Contacts</u>

      <u>Task Description</u>. The Field Agent plans the extent and kinds of
      further involvement with each client. He usually arranges for
      a third meeting to find out the client's degree of satisfaction
      with the information. If he judges the potential benefits of
      his continued involvement to be significantly great, he commits
      further effort to studying the information delivered, and he

prepares to participate actively in the decision-making process regarding how that information might facilitate beneficial change.

Skills/Knowledge Requirements. The Field Agent should be given some preservice guidance in allocating his resources for continued follow-up with his clients, while also initiating and responding to new requests.

5. Follow-Up Activities. The objectives of each successive encounter with the client after delivery of the first search results will vary. The purpose may be to determine user satisfaction, or it may be to introduce the client to a consultant, or to plan for the Agent's active involvement in planning for the utilization of the information.

    a. Sub: tantive Review of Information with Clients

       Task Description. In most cases, the Field Agent contacts the client to determine his satisfaction with the information, and they may determine that there is a need for more information or for a special consultant. However, the client may not have read the abstracts, may still be waiting for microfiche, may have read several articles or documents, or may have met with the consultant that was recommended. The Field Agent assumes the most appropriate role depending upon the situation, either to encourage the first steps, or to find out how he may be of further help to the client.

       Skills/Knowledge Requirements. This task requires the combination of skills already identified in the preceding tasks for the Field Agent, but may also require that he assume a more active role in dealing with the content and information utilization concerns of the client. The Field Agent then must rely on the follow-up strategy already developed, and be prepared to move into a more active role or to transfer the client to another resource person or consultant. The preservice program should help the F.eld Agnet to be alert to the several possibilities that might occur at this point in the Agent/Client interaction, and to experience the different inter-viewing requirements for each.

b. Participation in Program Planning

Task Description. The Field Agent participates in actual program planning with the client only on a selective basis and as planned earlier. This follow-up activity may involve his serving as an organizer of meetings, communication link between two groups or factions, or a group discussion leader.

Skills/Knowledge Requirements. The individual expertise of the Field Agent as well as the time available to him, dictate constraints on his involvement in different kinds of follow-up activities. He must be aware of these limitations, but must also be sensitive enough to the client's needs to identify substitute personnel to support the pending decicison-making or planning activities. The preservice training session can help the Field Agent understand the performance requirements for the various change-agent roles (e.g., group leader, facilitator) and can help him identify his own strengths and weaknesses in relation to those requirements.

c. Development of Feedback to the System

Task Description. The Field Agent documents and evaluates both his performance and that of the Central Office for each client, and reports these judgments to the Manager. He incorporates some measure of impact by clearly describing the client's situation before and after his involvement.

Skills/Knowledge Requirements. A preservice training program should help the Field Agent in developing performance objectives against which his work can be measured. Evaluation and reporting forms used other centers, and their statements of objectives, should be introduced for illustrative purposes.

B. MANAGEMENT OF FIELD-BASED OFFICE

1. Office Procedures. Although the Field Agent may spend considerable time traveling to, and meeting in his clients' work settings, he relies on the field office as a base of operations for receiving inquiries, establishing and maintaining a schedule, handling local or quick searches, and performing routine office activities (e.g., maintaining files).

a. Office Space, Staff, and Equipment Arrangements

Task Description. The Field Agent works through the local agency to arrange for appropriate office space, as centrally located in his service area as possible. He makes known his requirements for equipment, supplies, and furniture, and for a minimum of half-time secretarial support.

Skills/Knowledge Requirements. Needs will be determined by the individual Agent, while the mechanism for requisitioning supplies and materials will be learned on the job. Preservice training should acquaint the Agent with available equipment, e.g., micro-fiche readers, to aid his recommendations for purchase in the local districts.

b. Training and Supervision of Secretary

Task Description. The Agent explains the project goals and objectives to the Secretary, and defines her responsibilities in handling telephone calls (including the preliminary negotiation of requests), scheduling meetings with clients, maintaining control over the local collection, performing manual searches (e.g., with RIE or CIJE), and handling correspondence and records.

Skills/Knowledge Requirements. Although the assignment of secretarial responsibilities will vary, a preservice training program should outline realistic requirements for field office support and present the kinds of activities that are typically assigned to secretaries in the pilot state program. Some basic

components of the Retrieval Specialists' training (i.e., with RIE and CIJE) could be usefully adapted by the Field Agent for use in the inservice training of secretaries.

c. Record Keeping Procedures

Task Description. The Field Agent devises a system for documenting his activities, with a particular emphasis on recording--in a critical incident style--each encounter with his clients and describing the known results.

Skills/Knowledge Requirements. The preservice training program should provide the Field Agent with an opportunity to discuss with Managers and Directors the kinds of information that will be essential to record for purposes of evaluating the service and assessing the impact of information on the original problem situations. It is important to encourage this kind of documentation since it serves, in part, the need for in-depth treatment of the Field Agent/client interaction for purposes of developing a practical body of literature on the Field Agent role.

d. Liaison with Central Office

Task Description. The Field Agent periodically prepares formal reports to the Central Office on activities and problems, but also maintains regular communication with the Manager through telephone calls and periodic visits to the Office. He attempts to stay abreast of developments in the Central Office, and in turn, provides feedback to the staff on the degree of user satisfaction with their services.

Skills/Knowledge Requirements. A preservice training program should provide the Field Agent and Manager with the opportunity to explore their expectations with regard to reporting and communications, so that they can build on this foundation in practice.

2. Office Materials and Equipment

    a. Local Collection of Reference Materials

       Task Description. The FA works out arrangmeents with the Central
       Office to have RIE and CIJE, PREP reports, and other pre-packaged
       materials from the state, NCEC, or other centers, sent to the Field
       Office. He continually assesses his needs for ready-reference
       materials and makes known his requirements to the Central Office.

       Skills/Knowledge Requirements. The training program should introduce
       the FA to these packaged materials, and to encourage his develop-
       ment of a personal professional library in the areas of change,
       innovation, and educational research.

    b. Local Human and Agency Resources

       Task Description. The FA establishes and maintains a personal
       file of individuals in the local area who are readily available
       as resources to him or to clients.

       Skills/Knowledge Requirements. He must familiarize himself with
       the resources (e.g., university, library, social program agencies)
       in the area and initiate contacts with individuals in these insti-
       tutions. A training program should introduce him to the kinds of
       working relations with district agencies that have been developed
       by other FAs.

C. COORDINATION OF PART-TIME AGENTS*

    1. Training Activities. The Field Agent is a key participant in the formal
       training provided by the state and local agencies for the district-
       sponsored, part-time Field Agents. He also has a major role in the
       continuing inservice training of these part-time Field Agents.

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*The activities described in this section probably do not have immediate
implications for preservice training for personnel in their initial year of
operation, but may become major responsibilities as the operational programs
mature.

a. Preservice Training

Task Description. The Field Agent actively participates in the planning and implementation of a preservice training program for part-time agents. He brings to this involvement his own experiences and their potential application to a more decentralized operation.

Skills/Knowledge Requirements. The Field Agent will need to be able to describe his experience in a generalized framework, separate from the unique aspects of his operating mode that are attributable to his personal style.

b. Inservice Training

Task Description. The inservice training of part-time agents will involve a range of activities. The Field Agent may conduct some formal sessions with groups of part-time agents, but will also plan for more individualized and informal discussions. He may institute a method (e.g., periodic newsletters) that will help to create a network concept of communication, in which new literature may be reviewed, ongoing projects announced, and problems described.

Skills/Knowledge Requirements. His own developmental needs will help the Field Agent identify the needs for inservice training and develop a plan for their implementation. He must also be sensitive to the individual needs of the part-time agents and to the uniqueness of each situation.

2. Operating Procedures. The number of part-time agents participating in the statewide program, and the conditions under which school districts establish positions, will affect the degree of control and coordination that is possible. At a minimum, the procedures should be devised to encourage periodic communication between part-time agents and the Field Agent and to ensure a smooth flow of operations between the field and the Central Office.

a. Planning of Procedures

Task Description. The Field Agent involves the part-time agents in planning procedures for regular communications and transmitting requests to the Central Office. In some cases, the Field Agent may serve as the clearinghouse for all requests that are to be searched by staff in the Central Office. This might be accomplished by all requests first being sent to the Field Agent for review and transmittal, or it might involve his receiving a copy of all requests. The kinds of forms that will be used are agreed upon and requirements for reporting are established.

Skills/Knowledge Requirements. The Field Agent should be provided with guidance from the state, particularly the Project Manager, in establishing the kinds of alternate procedures that could be developed.

b. Back-Up Resource Activities

Task Description. In some cases, the Field Agent may devote full time to his role as coordinator of the part-time agents. Thus, his linkage role may become one of serving as a consultant to the part-time agents, either involving his direct contact with certain clients, or only with the Field Agent.

Skills/Knowledge Requirements. The Field Agent will need to be sensitive to the requests for help from his part-time agents, and become familiar with the individual operating procedures in each district.

Trainable Skills/Knowledge
(Field Agent)

A. LINKAGE ROLE

1. Publicity Activities

- Understanding of the Field Agent role and ability to describe this role to others.

- Knowledge of typical organizational patterns in school systems, and the more typical barriers to innovation.

- Ability to plan and deliver presentations--both formal and informal--that will be required in creating awareness of the program among school personnel.

2. Identification of Clients' Information Requirements

- Ability to distinguish between problem statements by clients that are well thought out and specific and those that are vague and superficial.

- Understanding of the kinds of questions that should be asked to help elicit from clients their actual problem and some of the specific elements underlying their concerns.

- Ability to translate the clients' problems into concrete information requirements.

- Ability to discuss the restatement of the problem as an information requirement with the client to clarify further his understanding of the client's problem.

3. Identification and Selection of Information for Clients

- Ability to summarize clients' information requirements in a way that will help the Retrieval Specialist develop a search strategy for identifying relevant materials.

- Ability to select ERIC descriptors and supervise the conduct of local searches (e.g., manual searches of RIE and CIJE).

- Ability to assess the relevance of search results to client's needs.

4. Delivery of Search Results and Development of Plans for Future Contacts

- Ability to show the client how to use different materials (e.g., PREP reports, ERIC resumes) included in the search results, and how to order copies of documents or articles (in hard copy or microfiche).

- Ability to schedule his time for continued follow-up activities with some clients and the handling of new requests.

5. Follow-up Activities

- Understanding of the various change-agent roles (e.g., group leader, facilitator) and awareness of his abilities in relation to the requirements of each role.

- Understanding of performance objectives against which his work can be measured.

- Knowledge of evaluation and reporting forms used by other centers, and also of their statements of objectives.

B. MANAGEMENT OF FIELD-BASED OFFICE

1. Office Procedures

- Familiarity with the variety of available equipment (e.g., microfiche readers).

- Understanding of requirements for field-office support and typical assignments to secretaries.

- Awareness of the kinds of information that should be reported to the Central Office for purposes of evaluating the service.

2. Office Materials and Equipment

- Familiarity with packaged materials (e.g., PREP reports) for his local resource collection, and knowledge of materials in the areas of change, innovation, and educational research for his personal professional library.

- Awareness of the kinds of working relations that other Field Agents have arranged with local resources (e.g., universities, libraries).

SELECTED TRAINING RESOURCES

A. MAJOR RESOURCES

Center Sources: A Collection of Materials Currently in Use by Educational
Information Centers. King of Prussia, Pennsylvania: Research and
Information Services for Education (RISE). (Prepared for National
Conference of Educational Information Centers, Downingtown, Pennsylvania,
Sept. 19-21, 1972.)

This publication is a compilation of materials selected from 13
operational centers, including two pilot state projects. Forms,
procedures, and listings cover the following topics: (1) Resource
materials; (2) Program Descriptions; (3) Field Agent Information;
(4) Request Record-Keeping Forms; (5) Internal Records (e.g.,
for proposals; securing of materials); (6) Request Forms; (7) Evalu-
ation Forms; (8) Agreement for Services. These examples are relevant
to the task requirements for both Central Office staff and Field
Agents.

The Educational Information Consultant: Skills in Disseminating
Educational Information. Berkeley, Calif.: Far West Laboratory
for Educational Research and Development, 1971.

A training package designed to teach EIC process skills through
role-playing, problem-solving, simulation, and decision-making
exercises.

Introduction:	Describes the emerging role and functional contexts of the EIC.
Simulation:	Provides an orientation to the skills involved in the following five modules.
Negotiation:	Trainee learns how to identify, analyze, assess, and define specifically the problem and attendant information need(s) of a client.
Retrieval:	Trainee learns how to develop a search strategy and locate, identify, and secure R&D informa- tion pertinent to the client's problem and request.
Transformation:	Trainee learns how to screen, analyze and/or synthesize and organize the results of the search in a form appropriate for delivery to the client.
Communication:	Trainee learns how to display and convey the results of the search to the client in a style appropriate for his use in finding a solution(s) to the problem.

Evaluation: Trainee learns how to assess the performance of the major EIC processes and overall role and the operational effectiveness of the setting within the linkage system; reformulate based on evaluation and make adjustments in processes and functions.

This material is most appropriate for the Field Agents, but the retrieval element is also applicable to the Print Resources Specialist's role.

Havelock, Ronald G. <u>Training for Change Agents. A guide to the Design of Training Programs in Education and Other Fields.</u> Ann Arbor, Michigan: Institute for Social Research, 1971. (ED 056 259)

This work provides a framework for the design of programs to train change agents in the skills of helping and of resource utilization, and presents some alternative models of such training programs. The organization of the training guide is as follows: Part I is concerned with outlining the principal content areas that relate to the concept of change agent from a variety of perspectives; Parts II and III provide some suggestions on how to select training goals and what principles to include in a good training design; Parts IV thru VI suggest how model training programs could be put together for various types of objectives--Part IV provides a framework with eight design features that should be incorporated in any viable plan, and suggests how such an outline can be used to develop training programs to meet various objectives, Part V presents outlines of several potential programs generated by conference task force groups, and Part VI presents a training model worked out for a particular type of role in detail (change agents in state education agencies). The total volume contains a number of ideas, suggestions, frameworks, principles, and tactical details at several levels of specificity applicable to a wide range of change agent skills and situations, and thus should be a useful aid and reference source to trainers and training program developers. (For related documents, see ED 056 256, 257, and 258). (Author/DB)

Havelock, Ronald G. and Mary C. Havelock. <u>Preparing Knowledge Linking Change Agents in Education: A Materials and Training Development Project.</u> (Final Report). Ann Arbor, Michigan: Institute for Social Research, 1971. (ED 056 257)

This project was designed to meet the following two objectives: (1) to produce a manual for educational knowledge linking change agents, and (2) to develop plans and designs for the training of educational knowledge linking charge agents. This final report of the project consists of three sections, as follows: Section I. History of the Project--Background and Rationale; How the Guide Was Created: Cycles of Development; and the Evolution of Change Agent Training Strategies and a Manual for Change Agent Training Design;

Section II. Evaluation of the "Guide" (Prototype #2) by 115 Change
Agents--The Reviewers; Responses to the Review Form (Appendix A:
Letter of Invitation to Potential Reviewers of the "Guide" (Proto-
type #2); Appendix B: Form for Background Information on Reviewers;
Appendix C: Reviewer Questionnaire and Cover Letter); and Section
III. Evaluation of CECAT Based on Post-Conference Reactions of
Participants--Background Readings; Printed Conference Materials;
Conference Activities; Post-Conference Action Possibilities; and
Future Need of Conference Related Materials; and Appendix A:
CECAT (Conference on Educational Change Agent Training) Evaluation
Form. A bibliography is provided. (For related documents, see
ED 056 256, 258, and 259.) (DB)

Havelock, Ronald G. A Workbook to Checklists to Accompany "A Guide to
    Innovation." Ann Arbor, Michigan: Institute for Social Research,
    1971. (ED 056 256.

    This workbook of checklists is Attachment 2 to the document "Preparing
    Knowledge Linking Change Agents in Education: A Materials and
    Training Development Project," see ED 056 257, and should accompany
    Attachment 1, "A Guide to Innovation in Education." The nine
    checklists in the workbook are as follows: (1) Over-all Management
    of a Change Project; (2) Preliminary Self-Assessment and Role
    Definition; (3) Who Is the Client?; (4) Linkage to the Client: How
    Good Is Your Relationship?; (5) Diagnosis of the Client's Problem;
    (6) Awareness and Retrieval of Information Resources; (7) Choosing
    the Solution; (8) Gaining Acceptance; and (9) Insuring Continuance.
    For related documents, see ED 056 257, 258, and 259.) (CK)

Koelling, Charles H. et al. Pilot Training Project for Personnel
    Participating in Pilot State Dissemination Programs. Final Report,
    OEC-0-70-4724). Columbia, Missouri: University of Missouri, 1972.

    This final report describes the preparations, content, and evaluation
    of the training program provided by the University for personnel
    in the three Pilot State Dissemination Programs. The training
    session descriptions, reference materials, and evaluative comments
    are reported. The trainees included all staff of the projects,
    including directors, retrieval personnel, field agents, secretaries,
    and some consultants from SEA's.

Mathies, M. Lorraine and Peter G. Watson. Computer-Based Reference
    Service--Tutor's Manual. Dallas, Tex.: Reference Services Division,
    American Library Association, 1971.

    This draft was prepared for use at a preconference institute sponsored
    by ALA and is currently under revision for a Spring 1973 publication
    release by ALA. The major emphasis of the discussion and searching
    illustrations is on ERIC. The authors discuss the structure of
    the Thesaurus, ERIC indexing, the use of RIE, Boolean logic, and
    Boolean search techniques. The materials are most relevant to the
    Central Office Staff, but some of the ERIC overviews are also
    appropriate for Field Agents.

McCleary, William, Brickley, Richard R., et al. <u>Notes on Establishing</u>
<u>an ERIC Educational Information Center</u>. (Draft copy, 1972).

This publication is currently in the form of a working document and
is expected to change and expand as suggested by users. Prepared by
the directors and staffs of two operational centers--Boulder Informa-
tion Retrieval Center and RISE--this document covers eight different
areas: (1) an overview of the ERIC system; (2) ERIC reference tools;
(3) microfiche equipment; (4) space requirements; (5) manual
searching; (6) machine searching; (7) ERIC orientation materials;
and (8) Frequently used educational sources. The material is most
appropriate for the Central office staff, but the overviews in several
areas may be useful for the Field Agents.

<u>Pilot State Project Materials.</u>

Packages from each of the pilot states include reports containing
development information and procedural descriptions. Examples of
forms and search requests are also included. These materials are
relevant to the training of all personnel.

Sherman, C.Neil, et al. <u>The Educational Information Center: An Introduction</u>.
Los Angeles: Tinnon-Brown, Inc., March, 1969.

This work is a general guide to the process of establishing an
educational information center and an introduction to information
handling and service. Start-up activities in planning, initial
acquisitions, processing, and services for a central office are
discussed. Examples of forms and procedures used by three major
operating centers in 1969 are illustrated and described. Major
reference and resource materials are identified. This work is
most app. .ble to the Project Manager and Print Resources Specialist.

Sieber, Sam D., et al. (Draft of Final Report on the Evaluation of the
Pilot State Dissemination Program). New York: Bureau of Applied
Social Research . 1972.

These papers include narrative and evaluative descriptions of the
various programs and personnel roles of the three Pilot State
Dissemination Projects. Forms and operating procedures are
described and usage statistics are reported.

Weisman, Herman M. <u>Information Systems, Services, and Centers</u>. New York;
Becker and Hayes, Inc., 1972.

Written as a text and as a reference source for practitioners, this
new publication is concerned with the practices of information transfer,
primarily in the scientific and technical community. In addition to
providing a t. ~retical basis for underst nding information systems
and system design, it provides more detailed accounts of information
service practices and operational management problems, particularly
useful for the Project Manager and retrieval staff.

B.   OTHER REFERENCES AND RESOURCES

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Handbook for Organization Development in Schools.   Eugene, Oreg,:   Center
     for the Advanced Study of Educational Administration

How to Use ERIC.   (Available from GPO,   OE-12037)

Interpersonal Communications.   Portland, Oreg.:   Northwest Regional Educational
     Laboratory (NWREL)

Linking Schools and State Education Departments to Research and Development
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VII. TRAINING MODULES

Required training content for educational dissemination service personnel is well summarized on pp. 92-93, 114-115, 133-135, 146-147, and 162-163 of the previous section. A comparison of trainable skills and knowledge across personnel roles s'.ows that some skills/knowledge areas are common to all roles. These skills/knowledge areas form one cluster of possible training experiences, in which trainees representing different personnel roles meet in joint session to hear and discuss 'he common content.

Other areas, particularly involving skills, require separate training arrangements for each personnel role. Except in an entirely individualized training plan, therefore, the balance of common and specific content calls for trainees to be exposed to some training modules in larger groups and to other modules in smaller groups. Within a fixed (e.g., one week) training schedule, the flow of trainees from larger to smaller groups presents some logistic difficulties but has compensating advantages in the variety of experiences it provides.

Although the content of training is largely dictated by the task and skills/knowledge analysis contained in Section VI, we see two sets of design alternatives in the delivery of training (setting, format, mechanism, etc.). One set of design alternatives concerns individualized versus group experience. We could produce, on the one hand, a program for self-study or, on the other hand, a program of group experiences, ranging from discussion and role playing to field trips. Of these alternatives, we saw limited merit in self-study, since educational dissemination work is intensely interpersonal. We felt that the training experiences should try to capture the context of actual work experiences. In educational dissemination, the context of actual work experiences is a stage with many players, a daily interplay between professional values and needs of different groups of educators.

A second set of design alternatives concerns "multimedia" presentation of content. There are many promising applications of media in training of this kind -- for example, in the close-in analysis of skill performance (such as preparing the "logic" of a bibliographic search) or in the time-space compression of a case study spanning several weeks of calendar time but presented on film or videotape in five minutes.

It will be appropriate in a later version of training modules like these to incorporate films and videotapes, but we decided (somewhat against our own preferences) to leave the modules print-based for the sake of exportability to sites where acquisition budgets and use arrangements cannot be predicted. We have noted in the past that multimedia training packages are underutilized because a training staff believes, rightly or wrongly, that the films or videotapes will be incompatible with on-site equipment, difficult to coordinate, etc.

Thus the modules are designed with minimum media requirements (e.g., an occasional audiotape) but with flexibility for trainers to add films or videotapes from the collection of the National Audiovisual Center and other sources of media materials relevant to educational dissemination, such as the ERIC clearinghouses (films and other media materials describing the ERIC system), the regional education laboratories (films and other media materials describing educational innovations), and commercial suppliers. However, the modules are designed to serve their purpose without media supplementation if necessary.

OVERVIEW OF MODULAR BLOCKS   Three blocks of modules were
                                  designed to meet the training
needs of dissemination project managers, retrieval staff (print and/or human resources), and field agents. The first block of modules provides background information for all trainees; the content of this block is more "knowledge" than "skills." The second block of modules is designed for exposure t retrieval specialists alone, and the third block of modules is designed for exposure to project managers and field agents jointly. The latter two groups of trainees share a subset of common modules for two reasons: (1) they are more removed from the skills of information searching than the retrieval specialists; (2) they are more concerned with interpersonal situations than the retrieval specialists. The commonality of project managers and field agents is such that only two modules have been designed for them separately.

Block 1, the common core for all trainees, consists of:

The growth of educational research and development.

The emergence of educational dissemination systems.

Present and future shape of educational dissemination systems.

Field trip to an operating educational dissemination center.

Overview of service operations elsewhere that contrast with those seen on the field trip.

The client system and the resource system in educational dissemination.

Personnel roles in the linkage system.

Introduction to computer-based educational information systems.

Retrieving ERIC information.

Negotiating queries.

Selecting equipment for an educational dissemination center.

Overview of educational innovations.

Packaging and communicating search results.

Finding and using human resources.

Documenting and evaluating service activities.

Additional activities for the total group of trainees would include an orientation and agenda-setting session; a self-assessment of skills/knowledge before and after training; an assessment of the modules themselves; and a group exercise in which teams consisting of project managers, retrieval specialists, and field agents work out entire episodes beginning with a client request and ending with request fulfillment and follow-up.

Block 2, modules for retrieval specialists alone, consists of:

Establishing and organizing a collection for educational dissemination.

Retrieving non-ERIC information.

Retrieving ERIC information (detailed approach).

Negotiating queries (adapted for retrieval
specialists).

Block 3, modules for project managers and field agents,
consists of:

Establishing contacts with school personnel.

Negotiating queries (detailed approach).

Retrieving ERIC information (adapted for project
managers and field agents).

In addition, project managers alone are exposed to a module on
establishing and maintaining staff relations, while field agents
alone are exposed to a module on establishing and maintaining a
field office.

SUGGESTED SCHEDULE   Allowing for the fact that some topics
FOR USING MODULES   are too multi-faceted for treatment in
                            a single session, we have identified
and developed 25 discrete modules, each intended to occupy a
particular group of trainees for durations of one to four hours.
There are few interdependencies among the modules, but overall the
flow of content is from knowledge to general skills to specific
skills. A training staff can re-sequence the modules in a variety
of ways without affecting their individual value, but a module like
"The emergence of educational dissemination systems" provides
useful co-orientation at the very beginning of a training period
and a module like "The team effort" is meant to integrate the
performance of a number of skills covered in other modules, hence
must appear near the end of a training period.

On the following pages we present a 5-day, 40-hour schedule in
which the interplay of joint and separate sections has been worked
out while preserving the flow of content from knowledge to skills.
In addition to the 25 modules, less-structured sessions begin and
end the sequence.

The following schedule is not the one we followed in our week
of module testing. Instead, time and sequence have been adjusted
to take account of trainees' evaluations (see Section VIII). In
particular, we accepted the almost unanimous opinion of trainees
that: (1) skill practice sessions were too compressed; (2) most
background modules could be improved by distributing readings
beforehand and eliminating the "lecture" segment.

(In order to show the overall structure of the schedule,
modules are identified by title only. For a synopsis or full
description of each module, see the "Trainer's Book," the second
volume of this report.)

DAY 1 (e.g., MONDAY)

---

8 - 9 AM   OVERVIEW OF THE WEEK'S SESSIONS; DISCUSSION OF
SCHEDULE AND SUGGESTION OF ADDITIONAL TOPICS TO
BE COVERED
(All trainees)

9 - 10   SELF-ASSESSMENT OF DISSEMINATION KNOWLEDGE AND
SKILLS; DISCUSSION OF SELF-ASSESSMENT
(All trainees)

10 - 11   "POST-SPUTNIK" TRENDS IN AMERICAN EDUCATION AND
THE EMERGENCE OF EDUCATIONAL DISSEMINATION SYSTEMS
(All trainees)

11 - 12   PRESENT AND FUTURE SHAPE OF EDUCATIONAL
DISSEMINATION SYSTEMS
(All trainees)

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1 - 3 PM   FIELD TRIP TO AN OPERATING EDUCATIONAL
DISSEMINATION CENTER
(All trainees)

3 - 5   CONTRASTING SERVICE OPERATIONS (OVERVIEW OF
SERVICE OPERATIONS ELSEWHERE)
(All trainees)

DAY 2

---

8 - 9 AM   THE CLIENT SYSTEM AND THE RESOURCE SYSTEM
              (All trainees)

9 - 10   PERSONNEL ROLES IN THE LINKAGE SYSTEM
              (All trainees)

10 - 12   INITIAL CONTACTS WITH SCHOOL PERSONNEL -- A
              (Project managers and field agents)

10 - 1   ESTABLISHING AND ORGANIZING THE COLLECTION -- A
              (Retrieval specialists)

--------------- - ---

1 - 4 PM   INITIAL CONTACTS WITH SCHOOL PERSONNEL -- B
              (Project managers and field agents)

2 - 5   NON-ERIC RETRIEVAL
              (Retrieval specialists)

4 - 5   ESTABLISHING AND MAINTAINING STAFF RELATIONS
              (Project managers)

4 - 5   ESTABLISHING AND MAINTAINING A FIELD OFFICE
              (Field agents)

DAY 3

8 - 9 P   INTRODUCTION TO COMPUTER BASED EDUCATIONAL
INFORMATION SYSTEMS
(All trainees)

9 - 11   RETRIEVING ERIC INFORMATION -- A
(All trainees)

11 - 1   THE QUERY NEGOTIATION PROCESS - A
(All trainees)

. . .

2 - 5 PM   RETRIEVING ERIC INFORMATION   B
(Retrieval specialists)

2 - 5 PM   THE QUERY NEGOTIATION PROCESS   B
(Project managers and field agents)

DAY 4

---

8 - 9 AM   SELECTING EQUIPMENT
                 (All trainees)

9 - 10   EDUCATIONAL INNOVATIONS: THE SUBSTANCE
            OF CHANGE
                 (All trainees)

10 - 12   RETRIEVING ERIC INFORMATION -- B
                 (Project managers and field agents)

10 - 12   THE QUERY NEGOTIATION PROCESS -- B
                 (Retrieval specialists)

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1 - 3 PM   PACKAGING AND COMMUNICATING SEARCH RESULTS
                 (All trainees)

3 - 5 PM   FINDING AND USING HUMAN RESOURCES
                 (All trainees)

DAY 5

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8 - 12 AM   THE TEAM EFFORT
                  (All trainees)

... .——. ...

1 - 3 PM   DOCUMENTING AND EVALUATING SERVICE ACTIVITIES
                  (All trainees)

3 - 5   REVIEW AND EVALUATION OF TRAINING SESSIONS
                  (All trainees)

The question of how best to follow-up the week of training must be answered differently at different sites. There was consensus among our advisers, trainers, and trainees that a second consecutive week of training would be unprofitable. After one week's training, they said, it was time for trainees to work for several months (one of the most experienced trainers suggested a minimum of six months) before attending additional training sessions. They added a corollary, however: staff of a dissemination project should meet frequently in problem-solving sessions. At least one such meeting per month would reinforce what new employees had learned about the functions and difficulties of each personnel role.

Both the formal content of dissemination work and its opportunities for professionalization go on indefinitely. After the specific skills of negotiating queries, conducting searches, packaging search results, etc., have been mastered, there remain vast areas of information science, educational research and development, and what might be called the political sociology of education to be explored in inservice training.

One promising strategy for follow-up training is the "specialized training package," containing one or many modules that focus on a particular skill. Examples of greatest relevance to dissemination work include Glenn Heathers' leadership training modules under development at Research for Better Schools, Pittsburgh, and Charles Jung's RUPS (Research Utilizing Problem Solving) modules that have been completed and tested at the Northwest Regional Laboratory, Portland. Skills taught by these modules strongly complement the dissemination skills that our modules teach.

Another promising strategy for follow-up training might be called "local adaptation". Each dissemination project using our modules will find that both our conceptualization of the project and our suggested operational procedures are somewhat "off," given local opportunities and constraints. After a period of work experience, staff who have experienced our modules should be able to meet and discuss (review, analyze, modify) the topic of each module in light of local factors. The format of such a meeting should be whatever seems natural in a local setting, but in any event there should be: (1) a mixing of personnel roles; (2) use of some outside "experts" for technical input; (3) agenda-setting by participants themselves; and (4) some opportunity for the former trainees to become trainers.

Since inservice training should be conducted at intervals throughout the life of a dissemination project, it may be possible to sequence and/or combine these strategies.

VIII.   MODULE TESTING

THE MODULE TESTING SESSIONS   Draft versions of all modules
                                 were prepared for test sessions
held at Stanford in the week of March 5-9, 1973. Some details of
who attended these sessions in the capacity of trainers and
trainees and how the sessions were conducted may be useful
information for the staff of future training sessions.

Trainees attended from state/local educational dissemination
projects in Colorado, Connecticut, t ie District of Columbia,
Georgia, New Jersey, Oregon, Rhode Island, South Carolina, Texas,
and Wisconsin. Despite the number of states represented, the total
complement of trainees was only 13. We had the disadvantage,
therefore, of less than a full "team" from each dissemination
project.

A "typical" trainee at these pilot sessions was neither new to
educational dissemination work nor unsophisticated in the topics
our modules were designed to cove . A "typical" project
represented at the sessions was located in a state department of
education. in small-scale operation at the present time (and for a
certain past period), and poised for expansion of service pending
necessary authorizations and funds.

Five of the 13 trainees were project managers, six were
retrieval specialists, and only two were field agents. Such a
ratio of personnel roles might recur in other multi-state training
sessions but probably not in sessions conducted in a single state.

Trainers were chosen to represent the kinds of expertise that
a state/local dissemination project could draw upon. That is, most
of our trainers (apart from the Stanford-SDC staff) were themselves
project managers and field agents from ongoing dissemination
projects. (The fact that we did not recruit retrieval specialist
trainers is more circumstantial than deliberate.) The project
manager and field agent trainers came from the states of
California, Kansas, Oregon, and Utah.

Representativeness of the training staff was considered to be
an important factor in the validity of the test sessions. Although
they were present as observers, such experts as Ronald Havelock,
Charles Jung, and Sam Sieber were not asked to conduct

sessions, since their unusual knowledge and training experience would surely have biased trainees' evaluations of the merit of each module.

Training sessions were held on the Stanford campus, but in nonacademic conference rooms similar to those in any agency. "Props" were minimal, consisting of an occasional audiovisual aid, tables of exhibits and literature, and two portable computer terminals for retrieval instruction.

As described in the "Trainer's Book," the sessions alternated in format from lecture and demonstration to role-playing, skills practice, and discussion. Much of the lecture content of the draft versions of the modules has been omitted from the present version and replaced by the combination of preparatory reading and group discussion.

The "Educational Extension Training Resources Advisory Committee" (EETRAC), whose members are listed in the preface of this report, spent parts of two days observing the training and compiling notes of suggested revisions in the modules. Because of their reputation and their great interest in the subject matter, they could scarcely remain silent in the sessions they observed, but they generally stayed in the background.

The week included the usual social occasions -- cocktail parties, dinners, a wine tasting. After a few long days of working together, the trainers and trainees became an amiable and cohesive group.

In short, although the pilot sessions took place on a college campus on the "homeground" of neither trainers nor trainees, and although the level of discussion was probably affected by the sophistication of some trainees as well as the background presence of EETRAC experts, we feel that the pilot sessions took place in a context of people and resources that is similar to a state department of education or relatively large local project. Major differences between the pilot sessions and future sessions lie in modules themselves and in the allocation of time to modules. Efforts to make more modules participatory, by deleting the lecture segment of some modules and increasing the activity or practice segment in others, have led, we think, to a better flow of events on each of the five days.

NUMERICAL AND NARRATIVE
EVALUATION DATA

For each of 25 modules, trainees
completed a 14-point evaluation
and also supplied written comments
in expansion of the 14 points. In addition, their comments in the
wrap-up review session were tape-recorded. EETRAC members and
trainers also made suggestions for improving the modules, of
course.

In response to each point on the evaluation form, trainees
could respond that the module was "quite good," "about right," or
"needs work." These responses were converted into a heuristic
three-point scale on which zero represents "needs work," one
represents "about right," and two represents "quite good."
Responses of trainees who evaluated a session (equal to or less
than the group attending a session, which could be as low as five
or six during simultaneous sessions) were averaged into a 14-point
evaluation profile per module.

On the 25 pages that follow, numerical module evaluation data
are presented. Beginning on page 210, some of the narrative
evaluations are summarized. The numbers and in some cases the
names of the modules do not correspond with those found in the
"Trainer's Book." Rather these numbers and names are the ones we
used during the week of pilot training.

In reading the numerical evaluation data, it is useful to
remember that a score of less than 1.00 indicates a point on
which the trainees felt a module should be improved, which a
score of 1.00 or greater indicates a point on which the trainees
felt a module was at least "about right" and possibly "quite
good."

MODULE 3. "Post-Sputnik" Trends in Education;
Emergence of Dissemination Systems

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.25	(12)
Level of material relative to "entry level" of trainees	.83	(12)
Authoritativeness of material	1.73	(11)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	1.10	(10)
Coverage of major points within topic	1.55	(11)
Allocation of time to each point	1.00	(11)
Illustrations or examples	1.09	(11)
Exercises or checklists	.80	(5)

CONDUCT:

Arrangements or context for the session	.83	(12)
Choice of trainer(s)	1.83	(12)
Effectiveness of presentation(s)	1.50	(12)
Appropriate involvement of group in session	.75	(12)
Administration of exercises, checklists, etc.	1.00	(6)
Responsiveness of trainer(s) to questions	1.38	(8)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 4.   Present and Future of Educational
Dissemination Systems

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.08	(12)
Level of material relative to "entry level" of trainees	.75	(12)
Authoritativeness of material	1.40	(10)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	.50	(10)
Coverage of major points within topic	1.25	(12)
Allocation of time to each point	.75	(12)
Illustrations or examples	.75	(8)
Exercises or checklists	.50	(4)

CONDUCT:

Arrangements or context for the session	.80	(10)
Choice of trainer(s)	1.58	(12)
Effectiveness of presentation(s)	.83	(12)
Appropriate involvement of group in session	.55	(11)
Administration of exercises, checklists, etc.	.60	(5)
Responsiveness of trainer(s) to questions	.89	(9)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 5. Field Visit to Operating
Educational Resources Center

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.67	(12)
Level of material relative to "entry level" of trainees	1.50	(12)
Authoritativeness of material	1.60	(10)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	.82	(11)
Coverage of major points within topic	.82	(11)
Allocation of time to each point	.11	(9)
Illustrations or examples	1.55	(11)
Exercises or checklists	1.33	(6)

CONDUCT:

Arrangements or context for the session	.91	(11)
Choice of trainer(s)	1.45	(11)
Effectiveness of presentation(s)	1.00	(11)
Appropriate involvement of group in session	.91	(11)
Administration of exercises, checklists, etc.	1.00	(6)
Responsiveness of trainer(s) to questions	1.27	(11)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 6. Contrasting Service Operations

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.33	(12)
Level of material relative to "entry level" of trainees ₁	1.17	(12)
Authoritativeness of material	1.36	(11)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	1.20	(10)
Coverage of major points within topic	1.45	(11)
Allocation of time to each point	.91	(11)
Illustrations or examples	1.27	(11)
Exercises or checklists	.80	(5)

CONDUCT:

Arrangements or context for the session	1.08	(12)
Choice of trainer(s)	1.50	(12)
Effectiveness of presentation(s)	1.00	(11)
Appropriate involvement of group in session	.92	(12)
Administration of exercises, checklists, etc.	.80	(5)
Responsiveness of trainer(s) to questions	1.40	(10)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 7. The Client System and the Resource System

                                                          EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination
center operations   1.00   (13)

Level of material relative to "entry level" of
trainees   .77   (13)

Authoritativeness of material   1.00   (12)

Instructional strategy (e.g., presentation, role
playing, exercises, etc.)   .64   (11)

Coverage of major points within topic   .64   (14)

Allocation of time to each point   .75   (12)

Illustrations or examples   .56   (9)

Exercises or checklists   .62   (8)

CONDUCT:

Arrangements or context for the session   .83   (12)

Choice of trainer(s)   .92   (13)

Effectiveness of presentation(s)   .69   (13)

Appropriate involvement of group in session   .77   (13)

Administration of exercises, checklists, etc.   .80   (5)

Responsiveness of trainer(s) to questions   .91   (11)

   Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
   In parentheses: Number of trainees responding to item.

MODULE 8.   The Linkage System.   Personnel Roles

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.08	(13)
Level of material relative to "entry level" of trainees	.75	(12)
Authoritativeness of material	1.10	(10)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	.60	(10)
Coverage of major points within topic	.91	(11)
Allocation of time to each point	.70	(10)
Illustrations or examples	.44	(9)
Exercises or checklists	.50	(6)

CONDUCT:

Arrangements or context for the session	.91	(11)
Choice of trainer(s)	1.00	(12)
Effectiveness of presentation(s)	.67	(12)
Appropriate involvement of group in session	.70	(10)
Administration of exercises, checklists, etc.	.80	(5)
Responsiveness of trainer(s) to questions	1.12	(8)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 9.   Initial Contacts with School Personnel -- A

CONTENT:

Relevance of material to educational dissemination center operations	1.44	(9)
Level of material relative to "entry level" of trainees	1.00	(8)
Authoritativeness of material	1.33	(9)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	.88	(8)
Coverage of major points within topic	.90	(10)
Allocation of time to each point	.62	(8)
Illustrations or examples	.86	(7)
Exercises or checklists	1.25	(4)

CONDUCT:

Arrangements or context for the session	1.22	(9)
Choice of trainer(s)	1.33	(9)
Effectiveness of presentation(s)	1.11	(9)
Appropriate involvement of group in session	.62	(8)
Administration of exercises, checklists, etc.	1.00	(5)
Responsiveness of trainer(s) to questions	1.43	(7)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 10. Establishing and Organizing the Collection -- A

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.43	(7)
Level of material relative to "entry level" of trainees	1.14	(7)
Authoritativeness of material	1.25	(8)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	.67	(6)
Coverage of major points within topic	1.14	(7)
Allocation of time to each point	.71	(7)
Illustrations or examples	.60	(5)
Exercises or checklists	1.00	(5)

CONDUCT:

Arrangements or context for the session	1.50	(6)
Choice of trainer(s)	1.43	(7)
Effectiveness of presentation(s)	1.14	(7)
Appropriate involvement of group in session	.86	(7)
Administration of exercises, checklists, etc.	.83	(6)
Responsiveness of trainer(s) to questions	1.33	(6)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 11. Initial Contacts with School Personnel -- B

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.20	(10)
Level of material relative to "entry level" of trainees	1.40	(10)
Authoritativeness of material	1.44	(9)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	1.11	(9)
Coverage of major points within topic	.67	(9)
Allocation of time to each point	.44	(9)
Illustrations or examples	1.00	(10)
Exercises or checklists	1.33	(6)

CONDUCT:

Arrangements or context for the session	1.50	(10)
Choice of trainer(s)	1.50	(10)
Effectiveness of presentation(s)	1.22	(9)
Appropriate involvement of group in session	1.44	(9)
Administration of exercises, checklists, etc.	1.12	(8)
Responsiveness of trainer(s) to questions	1.44	(9)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 12. Establishing and Organizing the Collection -- B

CONTENT:

Relevance of material to educational dissemination center operations	1.50	(6)
Level of material relative to "entry level" of trainees	.83	(6)
Authoritativeness of material	1.17	(6)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	1.00	(6)
Coverage of major points within topic	.67	(6)
Allocation of time to each point	.57	(7)
Illustrations or examples	1.00	(6)
Exercises or checklists	.83	(6)

CONDUCT:

Arrangements or context for the session	1.20	(5)
Choice of trainer(s)	1.33	(6)
Effectiveness of presentation(s)	1.00	(6)
Appropriate involvement of group in session	.83	(6)
Administration of exercises, checklists, etc.	.67	(6)
Responsiveness of trainer(s) to questions	1.00	(6)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 13.   Establishing and Maintaining a Field Office

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.25 (4)
Level of material relative to "entry level" of trainees	.60 (5)
Authoritativeness of material	1.00 (5)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	.40 (5)
Coverage of major points within topic	.60 (5)
Allocation of time to each point	.60 (5)
Illustrations or examples	.20 (5)
Exercises or checklists	.33 (3)

CONDUCT:

Arrangements or context for the session	.60 (5)
Choice of trainer(s)	1.00 (5)
Effectiveness of presentation(s)	.50 (4)
Appropriate involvement of group in session	.60 (5)
Administration of exercises, checklists, etc.	.00 (2)
Responsiveness of trainer(s) to questions	.60 (5)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 14. Establishing and Maintaining Staff Relations

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.50	(6)
Level of material relative to "entry level" of trainees	1.17	(6)
Authoritativeness of material	1.17	(6)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	.67	(6)
Coverage of major points within topic	.50	(6)
Allocation of time to each point	.40	(5)
Illustrations or examples	.60	(5)
Exercises or checklists	.33	(3)

CONDUCT:

Arrangements or context for the session	1.33	(6)
Choice of trainer(s)	1.67	(6)
Effectiveness of presentation(s)	1.20	(5)
Appropriate involvement of group in session	1.20	(5)
Administration of exercises, checklists, etc.	1.00	(3)
Responsiveness of trainer(s) to questions	1.20	(5)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 15.   Introduction to Computer-Based Educational Information Systems

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	.73	(11)
Level of material relative to "entry level" of trainees	.55	(11)
Authoritativeness of material	.91	(11)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	.33	(9)
Coverage of major points within topic	.73	(11)
Allocation of time to each point	.44	(9)
Illustrations or examples	.67	(9)
Exercises or checklists	1.00	(2)

CONDUCT:

Arrangements or context for the session	.50	(10)
Choice of trainer(s)	.55	(11)
Effectiveness of presentation(s)	.45	(11)
Appropriate involvement of group in session	.44	(9)
Administration of exercises, checklists, etc.	.67	(3)
Responsiveness of trainer(s) to questions	.73	(11)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 16.   The Query Negotiation Process -- A

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.25	(12)
Level of material relative to "entry level" of trainees	1.17	(12)
Authoritativeness of material	1.27	(11)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	1.18	(11)
Coverage of major points within topic	1.27	(11)
Allocation of time to each point	.82	(11)
Illustrations or examples	1.00	(9)
Exercises or checklists	1.00	(10)

CONDUCT:

Arrangements or context for the session	1.08	(12)
Choice of trainer(s)	1.33	(12)
Effectiveness of presentation(s)	.91	(11)
Appropriate involvement of group in session	1.09	(11)
Administration of exercises, checklists, etc.	1.20	(10)
Responsiveness of trainer(s) to questions	1.45	(11)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 17. Retrieving ERIC Information -- A

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.33	(12)
Level of material relative to "entry level" of trainees	1.00	(12)
Authoritativeness of material	1.20	(10)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	1.09	(11)
Coverage of major points within topic	1.30	(10)
Allocation of time to each point	.60	(10)
Illustrations or examples	1.00	(9)
Exercises or checklists	.90	(10)

CONDUCT:

Arrangements or context for the session	1.09	(11)
Choice of trainer(s)	1.42	(12)
Effectiveness of presentation(s)	1.00	(12)
Appropriate involvement of group in session	1.00	(11)
Administration of exercises, checklists, etc.	1.11	(9)
Responsiveness of trainer(s) to questions	1.40	(10)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 18. The Query Negotiation Process -- B
(for Project Managers and Field Agents)

EVALUATION RESULTS

CONTENT:

Relevance of material to education..l dissemination center operations	1.29	(7)
Level of material relative to "entry level" of trainees	1.00	(8)
Authoritativeness of material	.88	(8)
Instructional strategy (e.g., presentation, role ·laying, exercises, etc.)	.67	(6)
Coverage of major points within topic	.86	(7)
Allocation of time to each point	.29	(7)
Illustrations or examples	.67	(6)
Exercises or checklists	.50	(4)

CONDUCT:

Arrangements or context for the session	1.12	(8)
Choice of trainer(s)	1.25	(8)
Effectiveness of presentation(s)	.57	(7)
Appropriate involvement of group in session	1.14	(7)
Administration of exercises, checklists, etc.	.67	(6)
Responsiveness of trainer(s) to questions	1.17	(6)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 19. Retrieving ERIC Information -- B (for Retrieval Specialists)

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.40	(5)
Level of material relative to "entry level" of trainees	1.71	(7)
Authoritativeness of material	1.40	(5)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	1.00	(4)
Coverage of major points within topic	1.00	(5)
Allocation of time to each point	.71	(7)
Illustrations or examples	1.00	(4)
Exercises or checklists	1.25	(4)

CONDUCT:

Arrangements or context for the session	1.50	(4)
Choice of trainer(s)	1.40	(5)
Effectiveness of presentation(s)	1.00	(5)
Appropriate involvement of group in session	1.00	(5)
Administration of exercises, checklists, etc.	1.25	(4)
Responsiveness of trainer(s) to questions	1.40	(5)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 20. Selecting Equipment

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.73	(11)
Level of material relative to "entry level" of trainees	1.36	(11)
Authoritativeness of material	1.55	(11)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	1.44	(9)
Coverage of major points within topic	1.33	(12)
Allocation of time to each point	1.18	(11)
Illustrations or examples	1.00	(10)
Exercises or checklists	1.40	(5)

CONDUCT:

Arrangements or context for the session	1.00	(10)
Choice of trainer(s)	1.73	(11)
Effectiveness of presentation(s)	1.36	(11)
Appropriate involvement of group in session	1.00	(10)
Administration of exercises, checklists, etc.	1.00	(7)
Responsiveness of trainer(s) to questions	1.44	(9)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 21. Educational Innovations: The
Substance of Change

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	.91	(11)
Level of material relative to "entry level" of trainees	1.00	(11)
Authoritativeness of material	1.18	(11)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	.64	(11)
Coverage of major points within topic	1.10	(10)
Allocation of time to each point	.73	(11)
Illustrations or examples	1.00	(9)
Exercises or checklists	.67	(3)

CONDUCT:

Arrangements or context for the session	.45	(11)
Choice of trainer(s)	1.55	(11)
Effectiveness of presentation(s)	1.09	(11)
Appropriate involvement of group in session	.56	(9)
Administration of exercises, checklists, etc.	1.00	(7)
Responsiveness of trainer(s) to questions	.89	(9)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 22. Retrieving ERIC Information -- B (for
Project Managers and Field Agents)

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.12	(8)
Level of material relative to "entry level" of trainees	1.00	(8)
Authoritativeness of material	1.12	(8)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	.75	(8)
Coverage of major points within topic	.75	(8)
Allocation of time to each point	.38	(8)
Illustrations or examples	.71	(7)
Exercises or checklists	.80	(5)

CONDUCT:

Arrangements or context for the session	.62	(8)
Choice of trainer(s)	1.25	(8)
Effectiveness of presentation(s)	.62	(8)
Appropriate involvement of group in session	.71	(7)
Administration of exercises, checklists, etc.	.67	(6)
Responsiveness of trainer(s) to questions	1.14	(7)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 23. The Query Negotiation Process -- B
(for Retrieval Specialists)

EVALUATION RESULTS

CONTENT·

Relevance of material to educational dissemination center operations	1.50	(4)
Level of material relative to "entry level" of trainees	1.25	(4)
Authoritativeness of material	1.25	(4)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	1.25	(4)
Coverage of major points within topic	1.00	(4)
Allocation of time to each point	.75	(4)
Illustrations or examples	1.00	(4)
Exercises or checklists	1.33	(3)

CONDUCT:

Arrangements or context for the session	1.00	(5)
Choice of trainer(s)	1.40	(5)
Effectiveness of presentation(s)	1.20	(5)
Appropriate involvement of group in session	1.20	(5)
Administration of exercises, checklists, etc.	1.25	(4)
Responsiveness of trainer(s) to questions	1.40	(5)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 24. Packaging and Communicating Search
Results

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.23	(13)
Level of material relative to "entry level" of trainees	1.00	(12)
Authoritativeness of material	.83	(12,
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	.80	(10)
Coverage of major points within topic	.92	(12)
Allocation of time to each point	.75	(12)
Illustrations or examples	.89	(9)
Exercises or checklists	.71	(7)

CONDUCT:

Arrangements or context for the session	1.08	(12)
Choice of trainer(s)	1.17	(12)
Effectiveness of presentation(s)	.58	(12)
Appropriate involvement of group in session	.75	(12)
Administration of exercises, checklists, etc.	.43	(7)
Responsiveness of trainer(s) to questions	1.20	(10)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MOΓ'JLE 25. Finding and Using Human Resources

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.75	(12)
Level of material relative to "entry level" of trainees	1.25	(12)
Authoritativeness of material	1.36	(11)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	.91	(11)
Coverage of major points within topic	1.17	(12)
Allocation of time to each point	.91	(11)
Illustrations or examples	1.36	(11)
Exercises or checklists	1.40	(5)

CONDUCT:

Arrangements or context for the session	1.42	(12)
Choice of trainer(s)	1.45	(11)
Effectiveness of presentation(s)	1.17	(12)
Appropriate involvement of group in session	.75	(12)
Administration of exercises, checklists, etc.	.71	(7)
Responsiveness of trainer(s) to questions	1.33	(12)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 26. The Team Effort

<div style="text-align: right">EVALUATION RESULTS</div>

CONTENT:

Relevance of material to educational dissemination center operations	1.67	(12)
Level of material relative to "entry level" of trainees	1.25	(12)
Authoritativeness of material	1.00	(11)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	1.00	(12)
Coverage of major points within topic	.67	(12)
Allocation of time to each point	.42	(12)
Illustrations or examples	.70	(10)
Exercises or checklists	.88	(8)

CONDUCT:

Arrangements or context for the session	1.09	(11)
Choice of trainer(s)	1.36	(11)
Effectiveness of presentation(s)	.92	(12)
Appropriate involvement of group in session	1.00	(12)
Administration of exercises, checklists, etc.	.89	(9)
Responsiveness of trainer(s) to questions	1.44	(9)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

MODULE 27. Documenting and Evaluating Service
Activities

EVALUATION RESULTS

CONTENT:

Relevance of material to educational dissemination center operations	1.58	(12)
Level of material relative to "entry level" of trainees	.67	(12)
Authoritativeness of material	1.25	(12)
Instructional strategy (e.g., presentation, role playing, exercises, etc.)	.83	(12)
Coverage of major points within topic	.73	(11)
Allocation of time to each point	.50	(12)
Illustrations or examples	1.00	(12)
Exercises or checklists	1.00	(6)

CONDUCT.

Arrangements or context for the session	1.00	(12)
Choice of trainer(s)	1.33	(12)
Effectiveness of presentation(s)	.83	(12)
Appropriate involvement of group in session	.42	(12)
Administration of exercises, checklists, etc.	.67	(9)
Responsiveness of trainer(s) to questions	1.00	(12)

Scale values: 0 = Needs work; 1 = About right; 2 = Quite good.
In parentheses: Number of trainees responding to item.

NARRATIVE EVALUATION: GENERAL COMMENTS. Most trainees reacted
strongly against the week's time pressure, so much so that we would
recommend erring in the other direction, if at all, by moving slowly
from one module to another and encouraging full discussion of unclear
material as well as personal commentary.

The numerical evaluation item bearing upon time pressure is
"Allocation of time to each point." For 23 of the 25 evaluated
modules (the exceptions being #3 and #20), trainees felt that this
aspect of the training was unsatisfactory. The mean score for
"Allocation of time to each point" across all 25 modules is a low
.67.

Without dwelling on this aspect repeatedly, then, we can say
that "Not enough time!" was a theme of the narrative comments as well
as the numerical ratings.

A corollary comment was made by one trainee. She said, "Too
much time was devoted to the first few sessions. My suggestion
would be to shorten the preliminaries and spend more time in the
actual training modules. I realize that we all need background
information, but we could acquire this knowledge in other ways."

Other comments labeled by the trainees themselves as "overall"
included:

--   "The modules need to utilize and account for more group
       dynamics factors. We were obviously more receptive and
       involved when we moved into circles, faced each other,
       interchanged freely."

--   "Instructors injected too much personal opinion and
       experience. They didn't stick to materials."

--   "Would like to see field agents get more 'listening'
       training. There are some simple approaches and exercises
       from counselor training that would probably fit into the
       modules with a minimum of work."

--   "Need greater individualization throughout modules --
       here (#26) some superintendents, principals and/or
       classroom teachers could assist in evaluating trainee
       progress."

--   "Move away from lecture presentations. Use more
       innovations in instructional presentations -- multimedia
       would help."

Another overall comment or theme that runs through individual
module evaluations is that of role-playing participation from the
client system. Most trainees would have preferred to interact with
actual principals, teachers, etc., in negotiating queries and
delivering search results. Only a few trainees felt that the made-
up cases were a more efficient use of time.

NARRATIVE EVALUATION: MODULE BY MODULE. On the next few pages we shall summarize narrative comments for those modules that elicited individual commentary. We shall also indicate what we consider to be significant corollary aspects of the numerical ratings.

MODULE 3. Both in content and in conduct (see p. 185) this module "went over" pretty well. The low-rated item was "Appropriate involvement of group in session" (.75). In fact, the trainer talked overtime and into the lunch hour, inhibiting trainees who wanted to join the discussion.

Trainees commented that there was need to scale language down, that new trainees may be unfamiliar with acronyms used (in the historical synopsis), and that the material might have been covered in a handout. However, as one trainee said, the module "Helps us realize 'where we are at' in present operations and what has been involved in getting us there."

MODULE 4. Given the NIE's present policies on active educational dissemination systems, this was a thankless module to present. The NIE staff member who presented it was given a high personal rating of 1.58, but trainees seemed to express their frustration with NIE in other ratings and comments.

Several trainees commented on the formality or stiffness of this session, even though the trainer stood before them in the "usual" place and manner. It seems that the trainees were reacting against what they perceived as an "NIE briefing."

MODULE 5. This module, consisting of a field visit to an operating educational resources center, was a favorite among the trainees, as an overall mean rating of 1.14 attests.

The universal complaint among the trainees was that they couldn't grasp even individual operations, much less interrelated operations, in the time allowed (little more than an hour, with traffic delays getting from Stanford to the center ten miles away). Trainees also wished they could move through the center in small role-homogeneous groups, guided by an appropriate person with whom they could discuss each operation.

MODULE 6. The goal of this session was to provide contrasts to the visited center, in the form of vignettes about a differently organized and operated center. The director of "Center X" served as trainer in this session, just as the director of "Center Y" had served as guide during the field visit to his center.

Except for the high rating given the director of "Center X" personally, the trainees were dissatisfied with several aspects of this session. The overall mean rating of 1.08 is belied by comments that are more negative. One problem is that the trainees were still reeling from the just-completed tour of "Center Y." As one trainee said, "We needed time to discuss and digest what we had seen." The information on "Center X" was confusing, especially since the two centers differ in maturity as well as operational procedures.

MODULES 7,8. Modules 7 and 8 seem to have caught the trainees at the limit of their patience with lecture presentations. Modules 3,4, and 6 were lecture-based, and even module 5 required trainees largely to play the role of passive audience. By the morning of the second day of training, when modules 7 and 8 were presented, trainees were impatient to become more active.

The highest-rated aspects of modules 7 and 8 were relevance of material, authoritativeness of material, choice of trainer, and responsiveness of the trainer to questions. Lowest rating for each module concerned the absence of illustrations or examples.

Narrative comments dealt chiefly with the lecture approach, the abstractness of material, and the fast pace at which the trainer was trying to cover points.

MODULE 9. Well received. Overall mean rating of 1.01 understates the feelings of trainees as expressed in narrative comments. The trainees enjoyed the round-table format and the role-playing exercises. The printed materials were praised in this session, not in the foregoing ones.

MODULE 10. Good overall rating (1.07) and favorable narrative comments.

MODULE 11. Trainees polarized somewhat in evaluating this second module on contacts with school personnel. Some trainees thoroughly enjoyed the role playing ("As delightful as it was, I don't think you can package it." "A conference highlight -- one of the best sessions!"). The other point of view was: "Role playing is better understood and performed, in my opinion, when the stage is clear. The parameters of the setting usually were hurried, vague, and uncertain. Possibly this was a consequence of an uncertain topic or goal."

The overall mean rating of 1.20 puts this module near the top of the scale for all modules, but the divided opinion suggests that trainees who are uncomfortable with role playing or especially critical of its conduct should be treated differently from other trainees, either by taking on particular ("successful") roles or by engaging in other activities altogether. The minority of trainees who criticized this session are "outvoted," however, by the majority who praised it so highly.

MODULE 12. This module was not singled out for particular praise or criticism. It was regarded as a necessary session, rated slightly more negatively than positively (overall mean rating = .97), and not a stimulus for verbal comment one way or the other.

MODULE 13. Trainees were hard on the module dealing with field offices. The overall mean rating of .59 is one indication of their dissatisfaction. One trainee's comment was representative: "This subject might well be reserved for another time. It may not be necessary to include at all. This is all implementation activity at quite an elementary level." He went on to say, however, that "the session itself was well conducted and would need to be well rated."

Because we thought that the material in module 13 should be covered in some fashion during a week of training (it would be a conspicuous omission according to the list of topics generated in Section VI), we changed its format from a lecture to pre-reading of materials combined with a one-hour group discussion.

MODULE 14. The director of a state-level information center served as trainer for this session on establishing and maintaining staff relations. He was rated well personally, but trainees were dissatisfied with content aspects such as instructional strategy, coverage of points within topic, allocation of time, illustrations and examples, and the use of exercises and checklists.

In narrative commentary, trainees called for an outline of summary points and a panel of trainer/discussants to add other points of view. We since reworked this module to provide internal structure instead of an open "stand up and talk" format, and case studies were introduced for discussion.

MODULE 15. With an overall mean rating of .62, the numerical rating of this module indicates a number of shortcomings that are specified in the narrative commentary. The subject matter was difficult (batch and on-line computer information retrieval); the session was scheduled for an evening, after a banquet dinner; the trainer was selected because he had just finished a survey of all batch systems currently in use with ERIC tapes, but he had not had time to digest or write down his observations. The same trainer could present the same material with higher ratings today, but it may be desirable to assign an actual information center staff member to this module instead of a university-based researcher. The best batch systems in use today with ERIC tapes have been developed (Krahmer's North Dakota software) or extensively modified (Altus's QUERY optimization) in the field, not in the universities.

MODULE 16. Trainees rated this module on query negotiation quite highly (overall mean rating = 1.14), but they had little narrative commentary to add. One trainee felt that the session might "tend to teach i playing rather than question negotiation." Since the success of the module depends greatly on trainee practice via role playing, we don't know how to deal with this admonition, except of course to keep the exercises as close to "field reality" as possible.

MODULE 17. This module on retrieving ERIC information (part A) was given an overall mean rating of 1.10. It was praised as a teaching event. Even more experienced trainees who did not need an introduction to the ERIC thesaurus commented that they had picked up pointers for teaching the same material themselves.

MODULE 18. Ratings of this module suffered in comparison with those of module 16, with which it was developed simultaneously. The overall mean rating of .86 may suggest that trainees expected much more from this module than from module 16, which was understood to be an introduction. Time pressure also mitigated against a good feeling afterwards, because trainees were unable to finish their exercises.

MODULE 19. The evaluation pattern for this module on retrieving ERIC information (part B) combines high numerical ratings (overall mean rating = 1.22) with unanimous complaint about time pressure. The time of the module was extended considerably in the revision phase.

MODULE 20. Given the right trainer, one of the predictable highlights of a week's training is the module on selecting equipment for a dissemination center. The topic is more tangible than query negotiation, staff relations, search logic, etc. Furthermore, most trainees perceive a need to be conversant with recent developments in information processing equipment such as good-quality, low-cost microfiche readers and printers.

The director of a nearby educational resources center was chosen as trainer for this session because of his experience in testing a range of equipment in his own center. He presented a "consumer's guide" to equipment that went beyond advertising claims. As designed, the module is dependent upon a trainer with similar experience. The fast-changing state of the art in information processing equipment precludes our preparing a manual on equipment that would be reliable for more than a few months.

Overall mean rating for this session was 1.32 -- the highest rating accorded any session. The trainer himself received a rating of 1.73 -- the highest rating accorded any trainer.

One trainee's comment is representative: "I taped the whole thing -- worth a million."

MODULE 21. For this module on "Educational Innovations: the Substance of Change," we called in a regional laboratory researcher who has been assembling easy-to-use reference materials on promising new curricula and practices. He presented his own system for classifying the complexity of an innovation, the innovativeness of an adopting unit like a school, and the "success index" of an effort to bring about change.

Mitigating against the success of the session were several factors, including the late evening hour and some uncooperative audiovisual equipment. Therefore, in the context of a mediocre overall mean rating of .91, the highest rating went to the trainer himself (1.55).

One trainee took the minority position that "it all sounded like a sales pitch for the _____ lab." Apparently a calculated risk in choosing a trainer for this module is that anyone who admits to being enthusiastic about innovations may be suspected of bias, while an unenthusiastic trainer is likely to reinforce the same attitude in trainees.

In our revision of this module, we attempted to give it more trainer-independent structure, hence a more predictable if more limited effectiveness. Trainees are asked to prepare for the session by reading a brief paper that deals with producers of innovations, innovations themselves, and reference tools for keeping track of the changing stockpile of innovations.

MODULE 22. After modules 20 and 21, which can be viewed as wild cards in the skill-training sequence, trainees' evaluations of this additional module on retrieving ERIC information are in a more normal range. The overall mean rating of .83, which in itself indicates needed work, is not clarified by trainees' comments, most of which are positive ("Generally good information."). Dissatisfaction apparently centered on time pressure (rating on time allocation = .38), and we have assigned more time to the revised version of the module.

MODULE 23. This follow-on query negotiation module for retrieval specialists had a high overall mean rating of 1.20. Trainees found nothing in particular to criticize. A representative comment was: "Very good -- helped me to understand what a field agent goes through in order to negotiate a query. The role-playing exercises were very helpful since I have had no experience in negotiating with a client."

MODULE 24. The module on packaging and communicating search results received a mediocre overall mean rating of .88. Trainees felt that the subject matter was vague; some wished that the group could become involved in packaging a product in order to gauge the relevance and difficulty of points that were made.

MODULE 25. No particular commentary was elicited by this module on finding and using human resources except the suggestion from several trainees that checklists similar to those the trainer had prepared should be distributed beforehand and then only discussed during the session itself. We incorporated this suggestion in the revised module but, given the high overall mean rating of 1.21, left other aspects of the module alone.

MODULE 26. The good and the bad of the module on "The Team Effort" seem to be exactly balanced (overall mean rating = 1.00). The good was that trainees appreciated this semi-final opportunity to integrate and perform skills that had been covered in a number of previous modules. The bad was that time ran out before most teams had completed the joint exercises.

Some trainees wished to include actual school personnel in this exercise, as the source of queries and the recipients of packaged results. One trainee commented, "I do not share the notion that bringing in an outsider (superintendent, teacher, principal) to the group would have helped us. This technique frequently introduces a 'strangeness' to the group setting that proves more distracting than beneficial."

MODULE 27. We can predict that this module, on documenting and evaluating service activities, will always receive some bad ratings in a multi-state group of trainees. There was resistance to principles of documentation and evaluation that were presented from the perspective of one (state-wide) information center only.

The overall mean rating of the module, .92, would have been lower had it not been for the ingenuity with which the trainer (an information center director) had developed record-keeping procedures and effectiveness indexes in which trainees saw some merit.

One trainee commented: "Different organizations will require different depths of evaluation. Maybe a taxonomy of evaluative techniques and strategies would help."

IX. SUMMARY

The rapid growth of educational research and development in America since the late 1950's has widened the gap between average classroom practice and "best available" validated practices that result from research and development at educational laboratories, universities, and school-based practice improvement projects.

The U.S Office of Education has long pursued a goal of wide-scale dissemination of validated research and development outcomes. The National Institute of Education has taken over much of this dissemination activity, in the context of a federal affirmation of improved education through research and development.

Adopting the dissemination model of scientific disciplines like physics and chemistry, USOE established in the mid-1960's an information system, the Educational Resources Information Centers (ERIC). ERIC clearinghouses were established at more than 20 sites across the country, each clearinghouse responsible for particular subject matter (e.g., the teaching of social studies) within the educational literature. The ERIC system has done an excellent job of capturing, classifying, and making available an educational research and development knowledge base that was formerly fragmented and inaccessible.

The somewhat disappointing level of ERIC utilization by school personnel led to studies of the actual professional communication systems used by educators. It was not surprising to learn from these studies that educators do not use information in the same ways or for the same purposes that scientists do. Many educators lack the time, competence, and motivation to conduct a literature search in order to deal with problems arising in practice. They rely instead on the wisdom and experience of others -- teachers, administrators, state department specialists, university consultants, etc. As a consequence, educators' knowledge of validated new practices is spotty.

By the end of the 1960's, it was becoming clear that important groups of educators -- those in the classroom and in the school office -- were not users of ERIC and, given ERIC's structure then and now, were not likely to become ERIC users. What was needed was an "active" dissemination system that would bring information to these educators through familiar channels.

There are many ways for an educational dissemination system to change its posture from "passive" to "active." It could, for example, produce multimedia exhibits of the information it wants to bring to educators' attention. It could hold problem-solving workshops. It occurred to USOE to encourage experimentation with "active" dissemination systems, beginning with the system that seems to have worked so well for American agriculture: the extension agent system.

The U.S. Office of Education initiated, and the National Institute of Education continued, a contract with the Institute for Communication Research at Stanford University to conduct a project entitled, "Development of Training Resources for Educational Extension Services Personnel." The Education and Library Systems Division of the System Development Corporation undertook a major part of the project as subcontractor.

The project began in summer 1972 with a review and synthesis of models for active dissemination systems. One aspect of this review consisted of site visits to active dissemination programs located in three state departments of education.

From the five most promising active dissemination models we extracted personnel roles and functions. It was found that seven roles/functions sufficed for all five models, although cnly a few roles/functions would be evident in a single model. The seven roles/functions were labeled "project director," "project manager," "print resources specialist," "human resources specialist," "editor/publications specialist," "media specialist," and "field agent."

We next undertook a functional analysis of each personnel role and compiled lists of tasks for which each role implies competence. The performance of most tasks requires background knowledge as well as specific skills. The knowledge/skills requirements of each task were specified and classified into two categories: (1) knowledge/ skills that probably could be taught in training sessions of short duration; (2) knowledge/skills that would be difficult to teach in training sessions of short duration and should therefore be included among the selection criteria of each role.

Selection criteria, encompassing formal training and experience as well as knowledge/skills belonging to category (2) above, were then drafted for the guidance of NIE or any state/local agency that may be recruiting staff for an active dissemination program.

"Trainable" knowledge/skills topics -- category (1) above -- were arrayed in a matrix of roles and tasks that showed us patterns of common and unique training requirements. From this matrix we began to extract modules of training content that typically spanned several related knowledge/skills topics and could be administered to trainees in one or more personnel roles.

The training requirements of two roles, the editor/publications specialist and the media specialist, posed problems that caused us not to develop modules specifically for them. The first problem is a low amount of overlap between tasks performed in these roles and tasks performed in other dissemination roles, which means that trainees in these roles would participate in fewer joint sessions and would require more unique training modules. The second problem is that active dissemination programs around the country are just not ready to move into the kind of service that these roles imply -- service that achieves economies of scale by publishing or broadcasting a quasi-mass communication response to questions of high current interest to groups of educators. We therefore did not further elaborate the training content that editor/publication specialists and media specialists need to function in an active dissemination program.

Training modules occupying about a week of joint and individual activity were developed for project directors/managers, retrieval or resource personnel, and field personnel. Altogether, 28 modules were developed, of which 25 are substantive and 3 are procedural (opening session, closing session, and self-assessment).

The modules were tested at Stanford during the first week of March, 1972. Trainees were invited from active dissemination programs in several states; 13 trainees representing the three personnel roles were able to attend. Trainers as well were recruited chiefly from active dissemination programs in several states.

Trainees, trainers, and an advisory committee critiqued the training modules as they appear on paper and as they were transformed into sessions. Most modules were revised on the basis of this criticism.

Products of the Stanford/SDC project include: (1) a Final Report of work performed, conclusions reached, etc.; (2) a Trainers' Book of modules; (3) a Trainees' Book of modules. These products will remain in the public domain for use, and adaptation if necessary, by sponsors or administrators of active educational dissemination programs.

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